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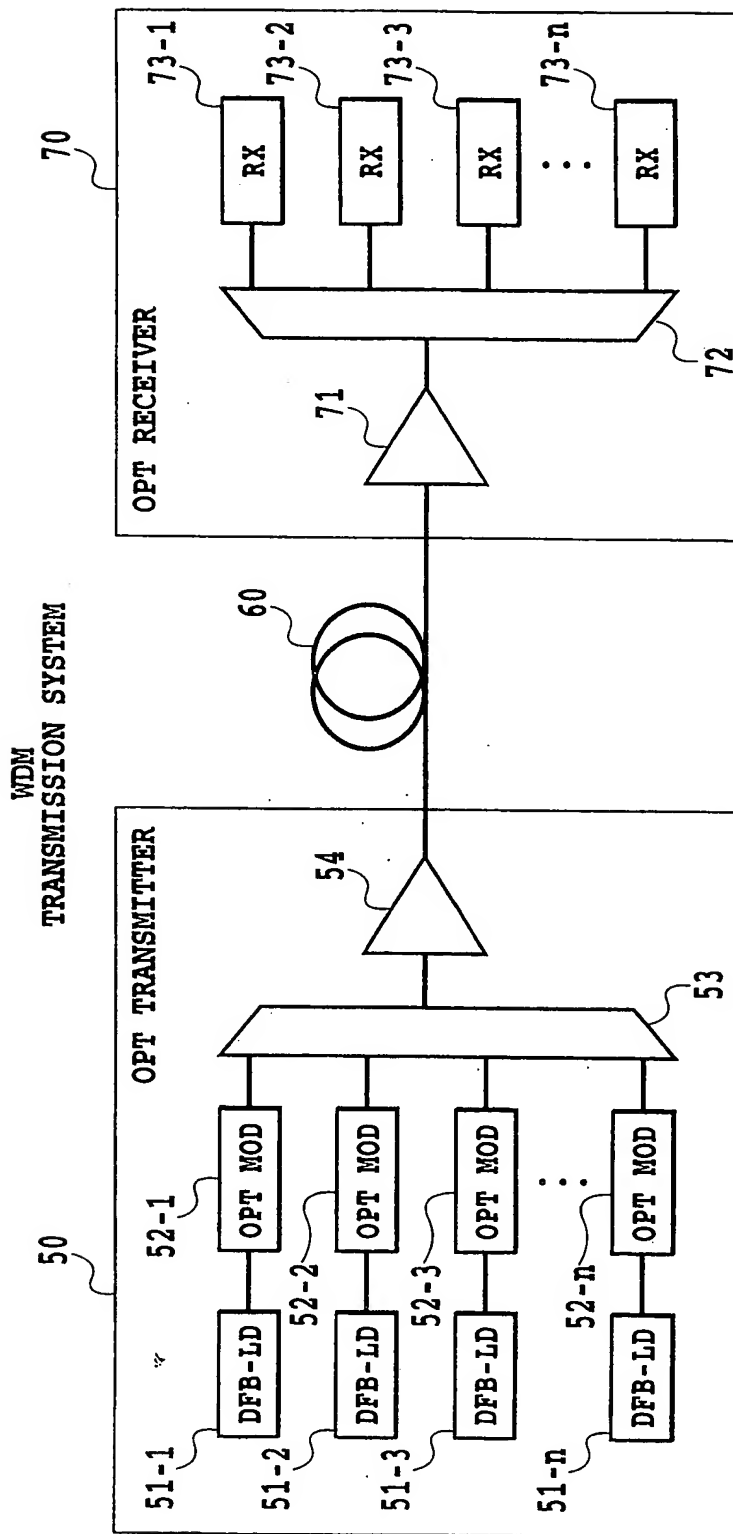
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**FIG.1**  
**PRIOR ART**

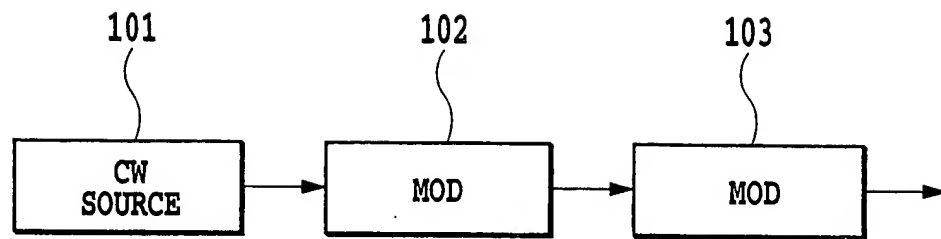
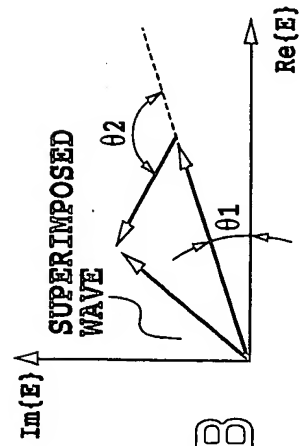
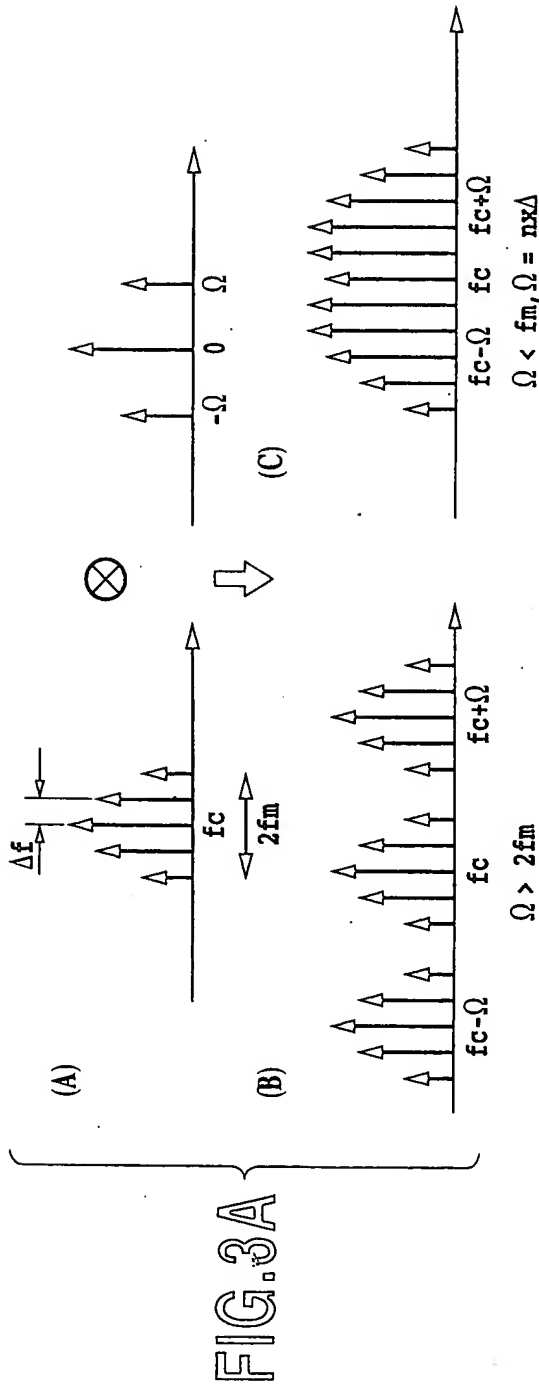
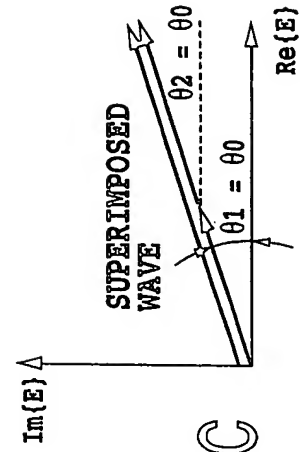


FIG.2



ADDITION OF TWO MODES  
WITH DIFFERENT PHASES



ADDITION OF TWO MODES  
WITH SAME PHASE

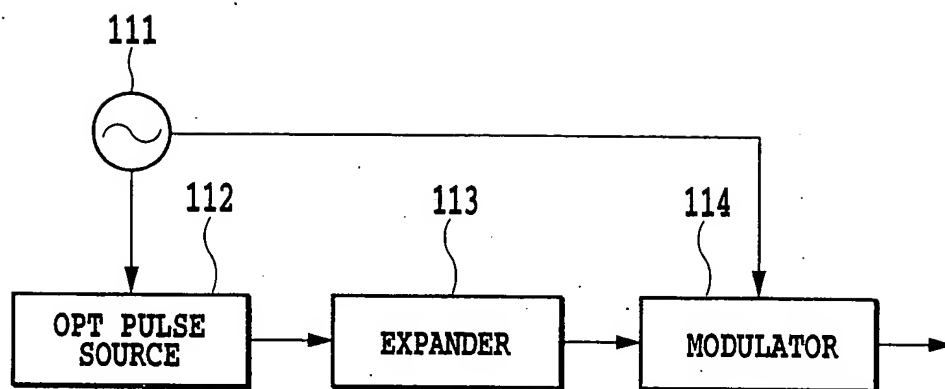


FIG.4

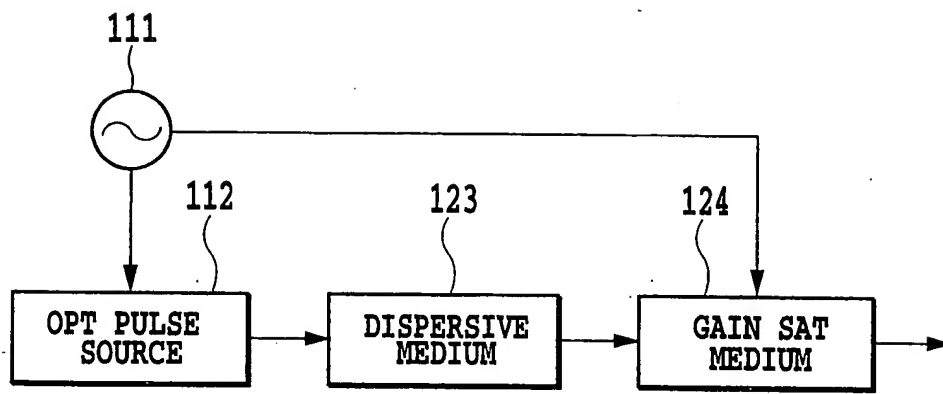


FIG.5

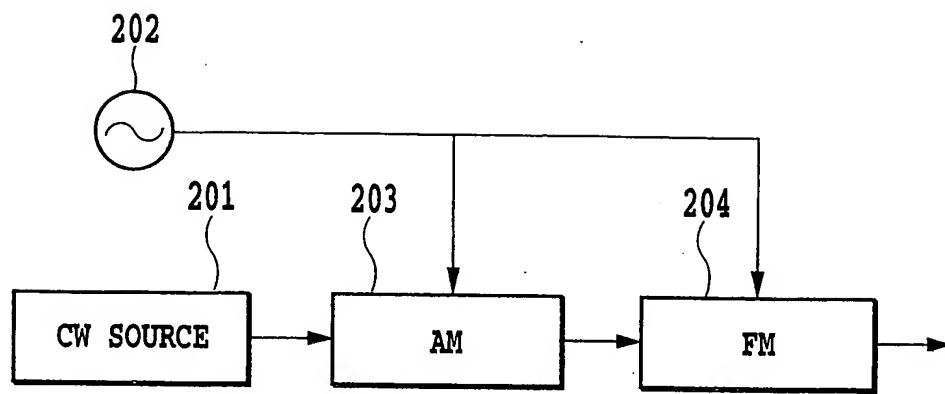


FIG.6

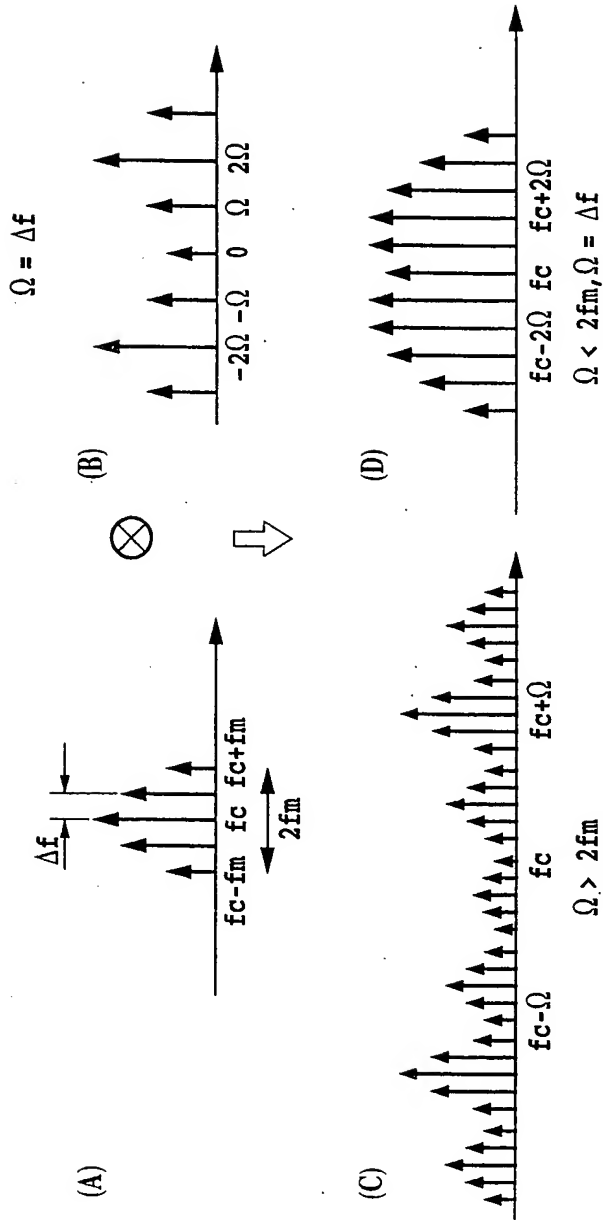


FIG. 7



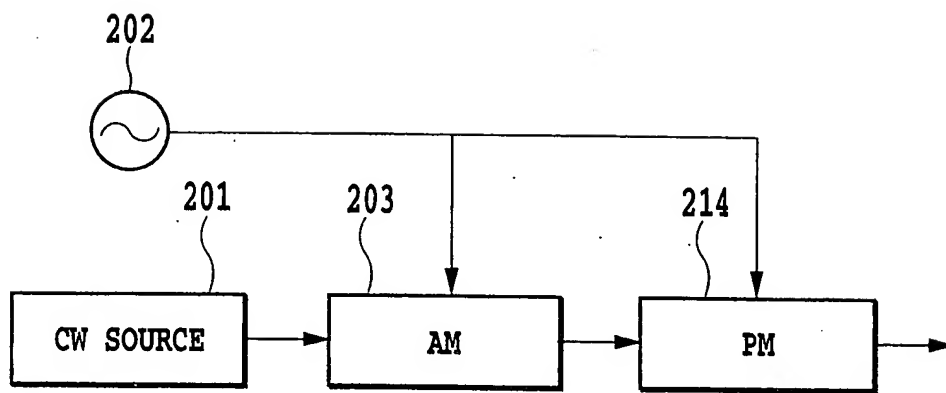


FIG.8

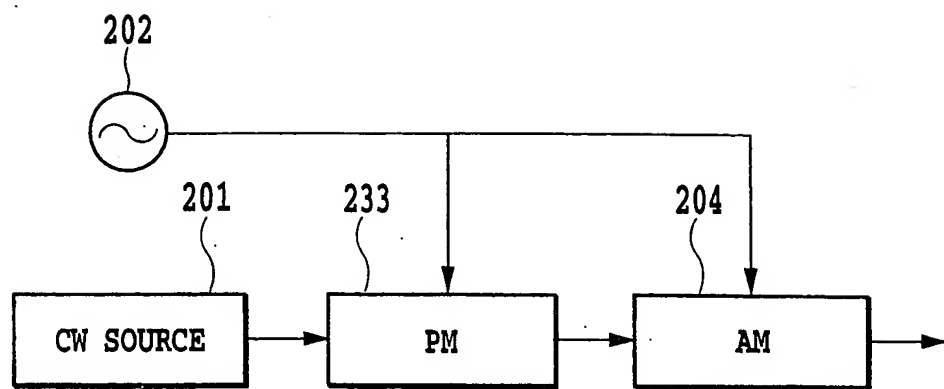


FIG.9

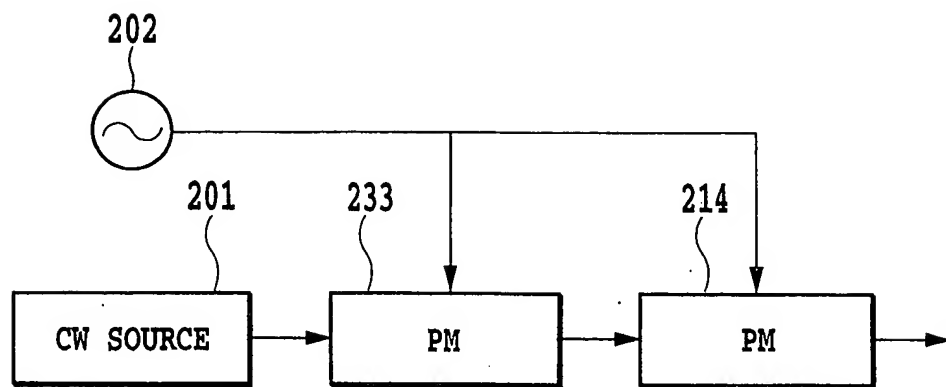


FIG.10

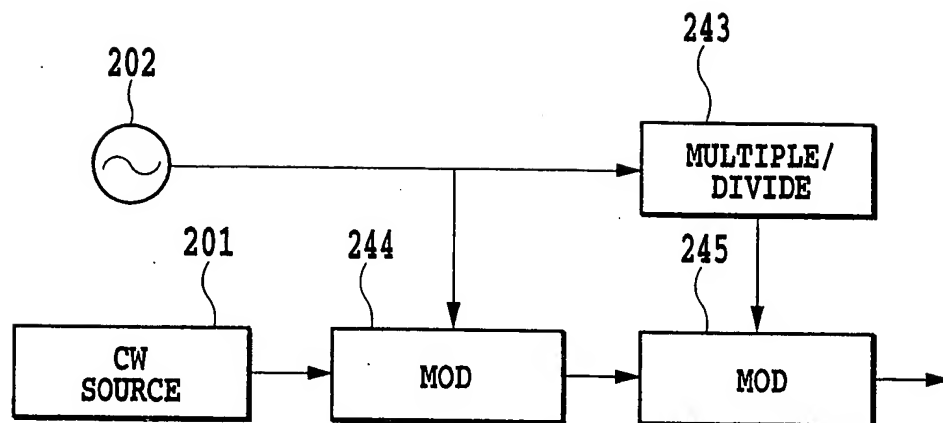


FIG.11

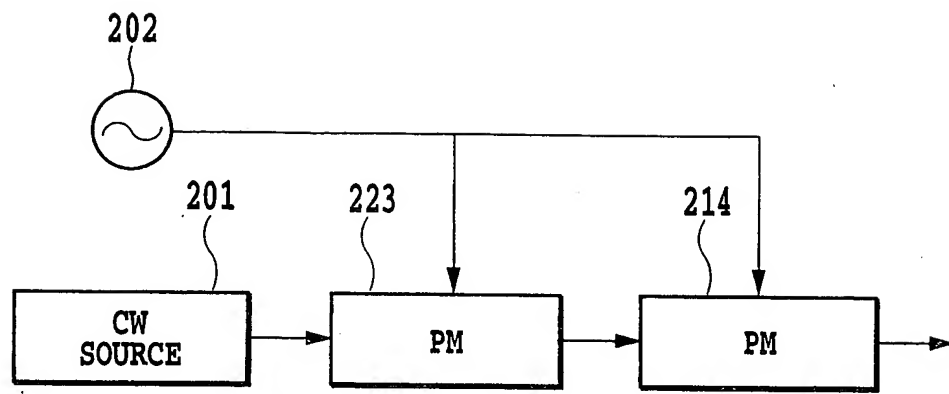


FIG.12

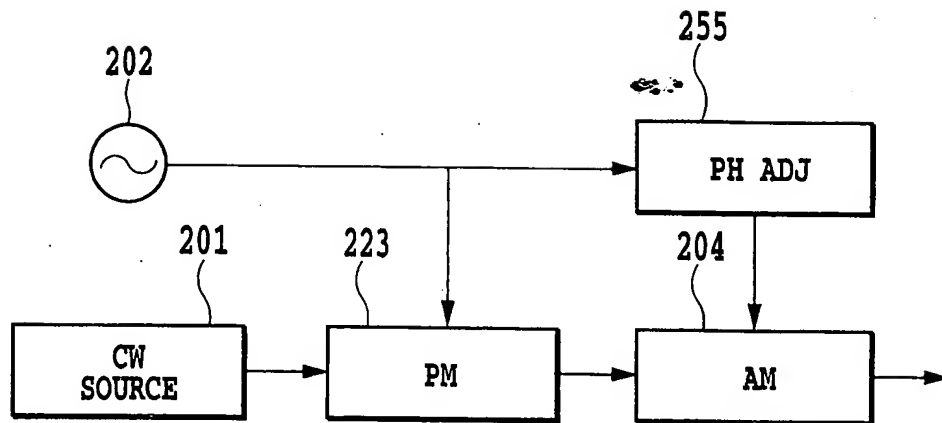


FIG.13

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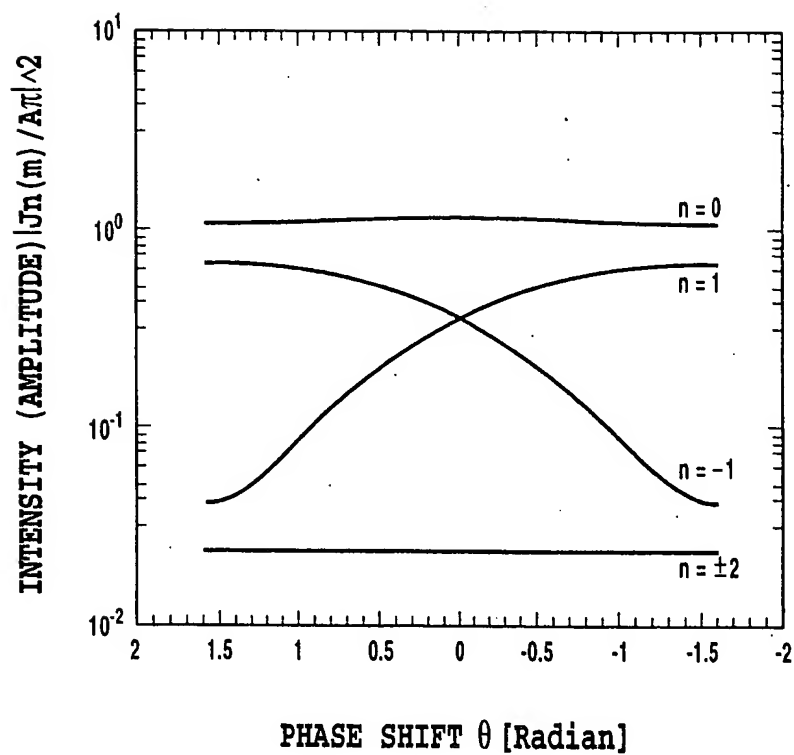
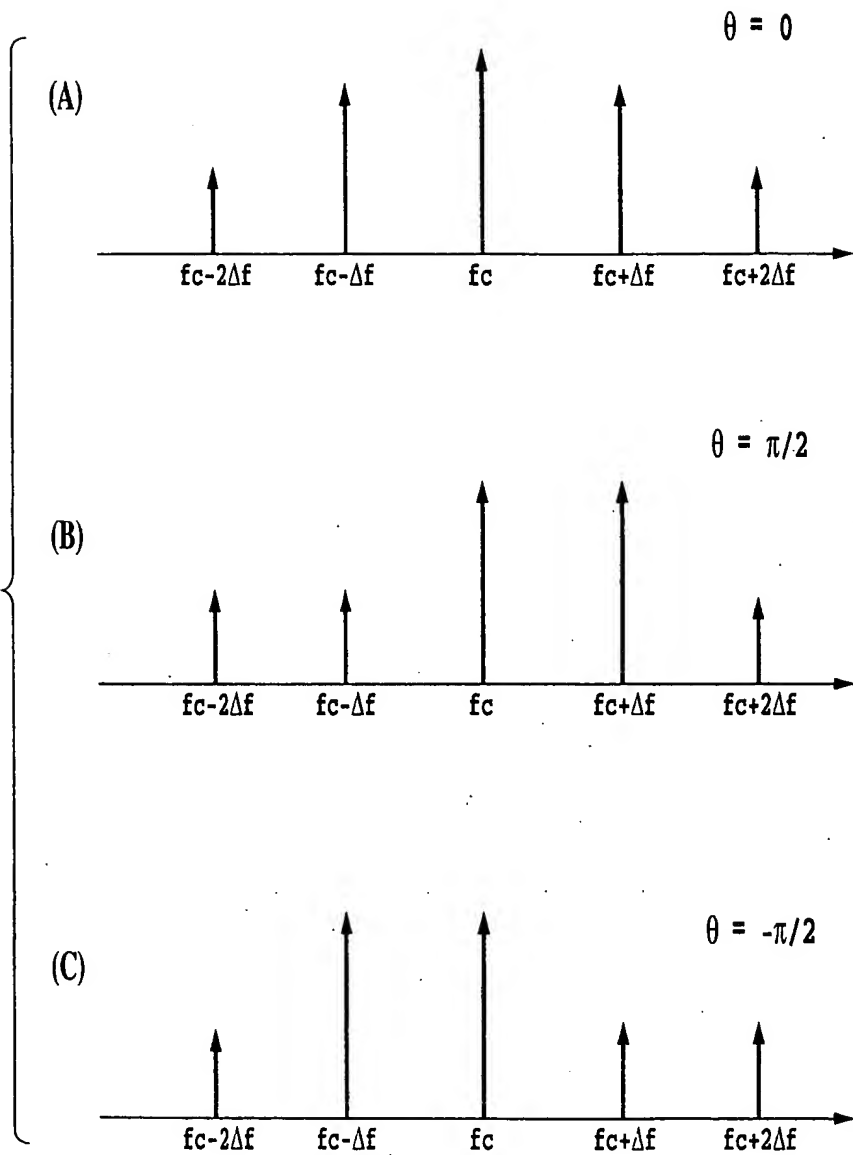


FIG.14

FIG.15





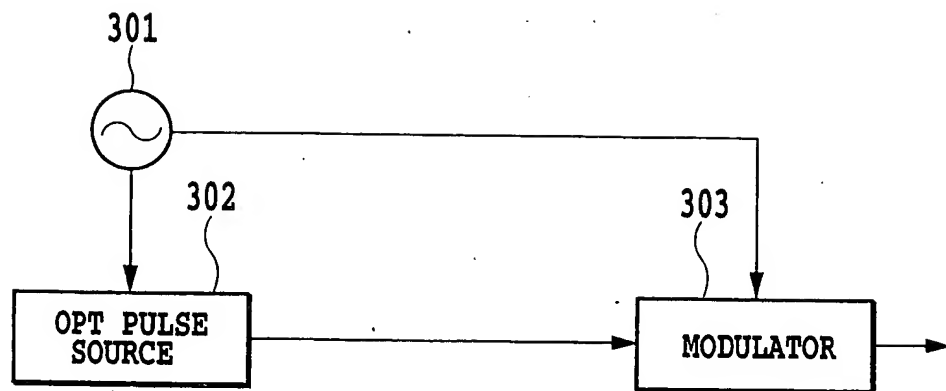


FIG.16

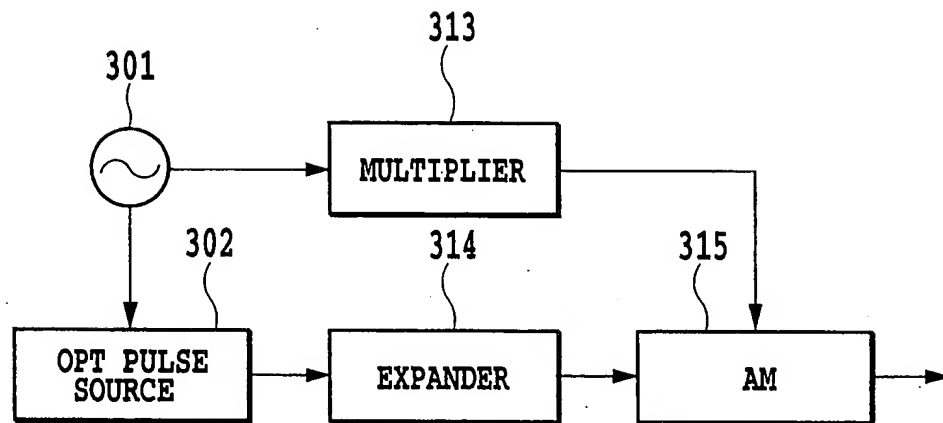


FIG.17

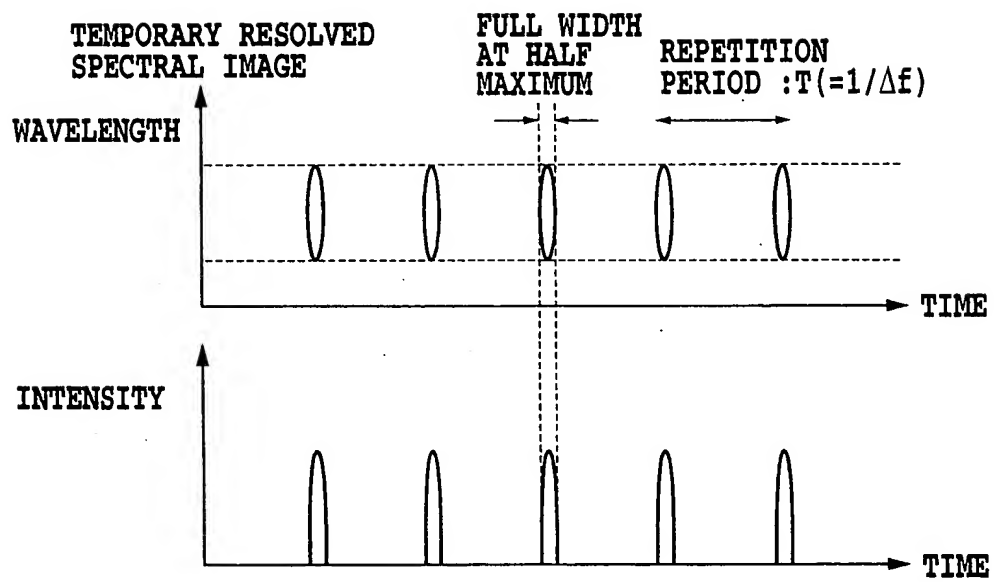


FIG.18

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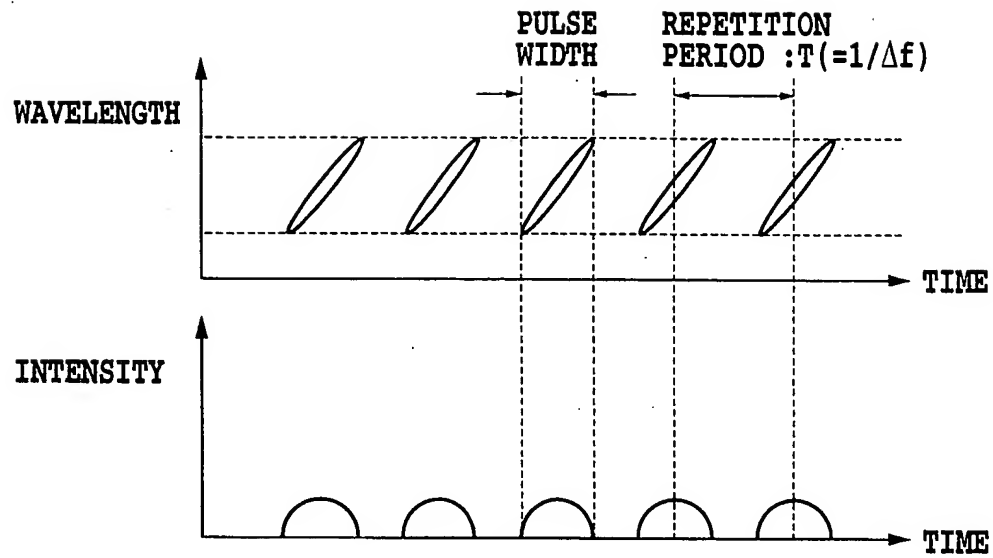


FIG.19

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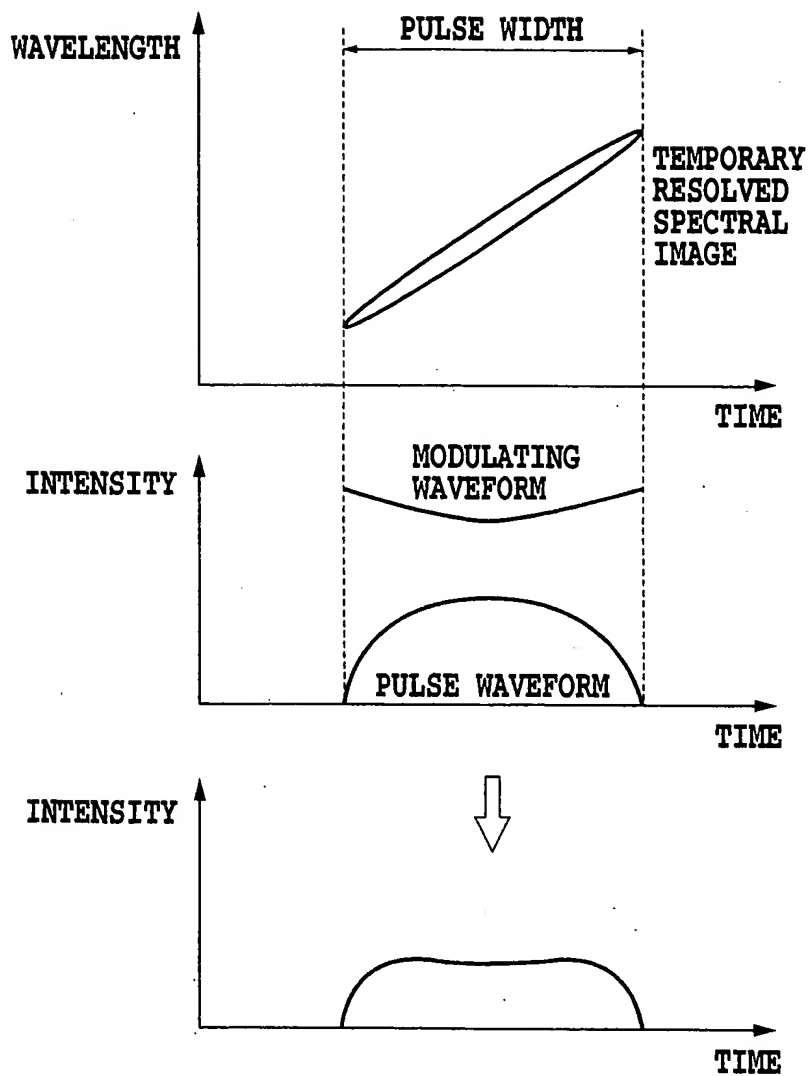


FIG.20

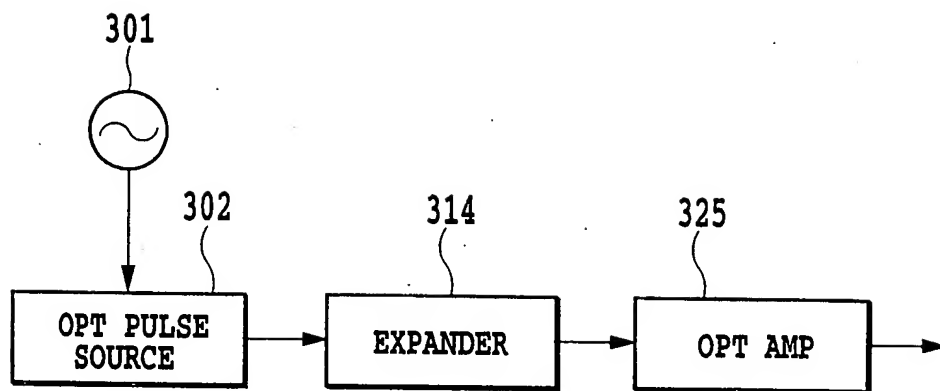


FIG.21

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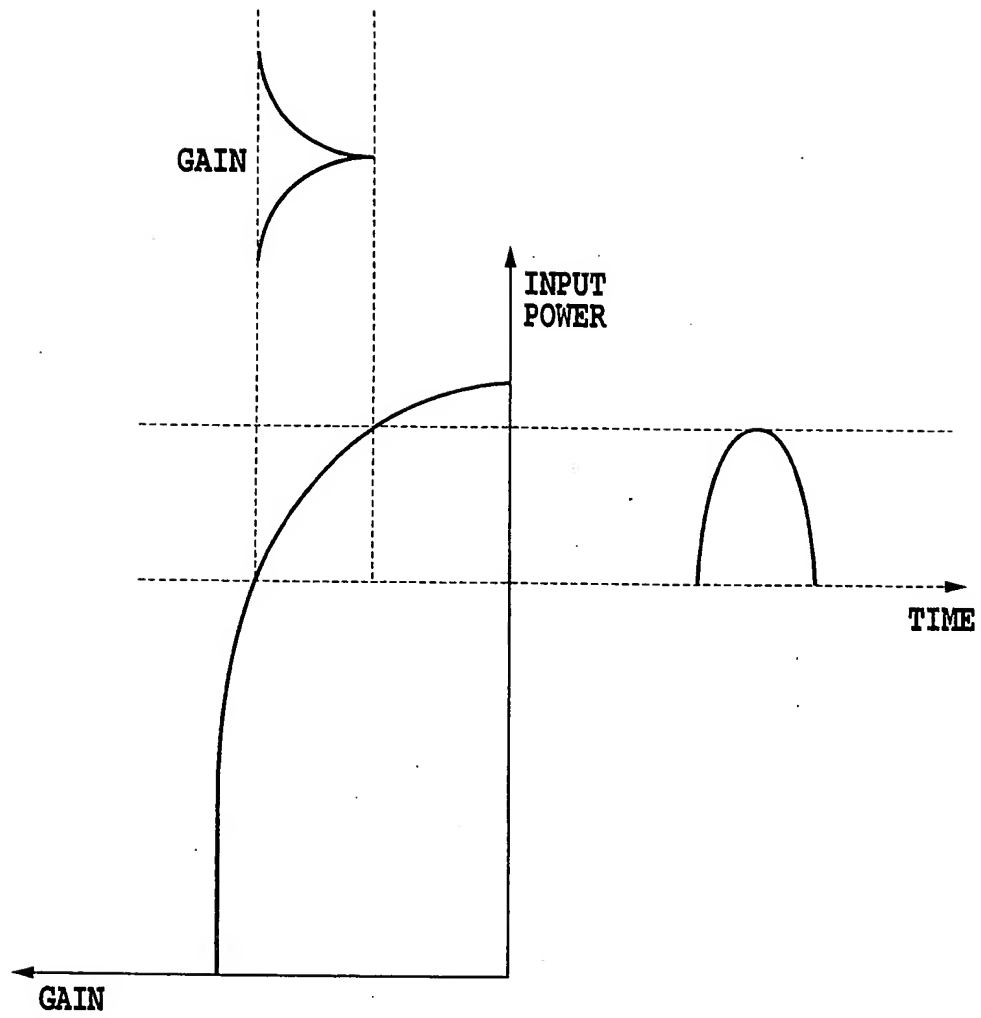


FIG.22

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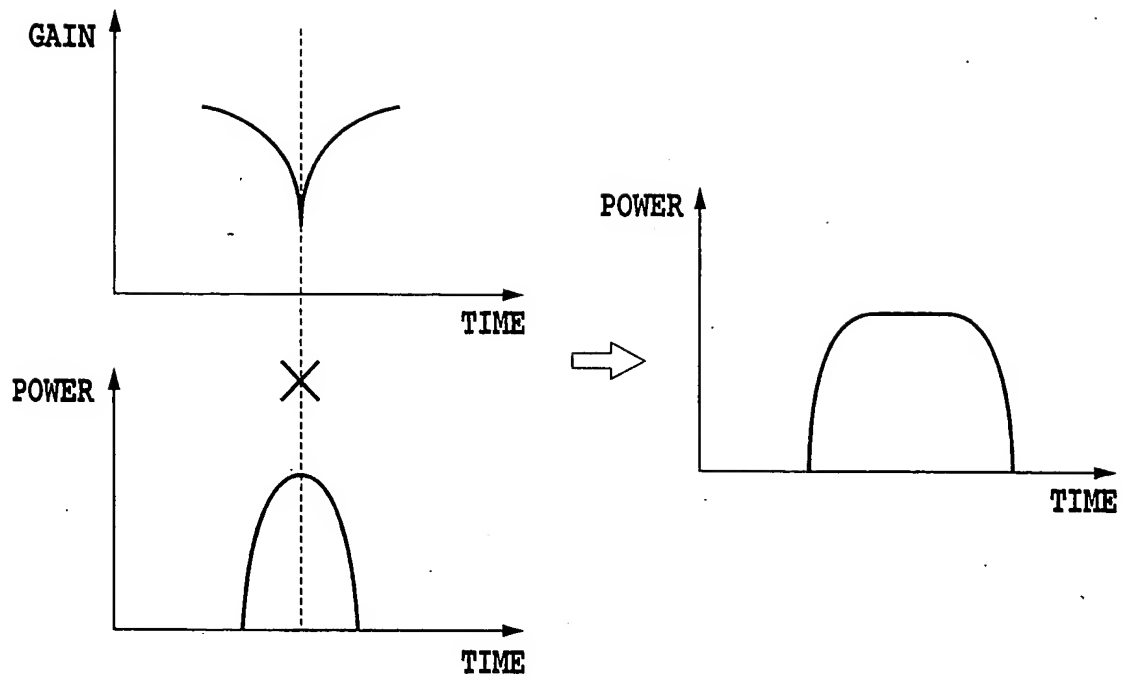


FIG.23



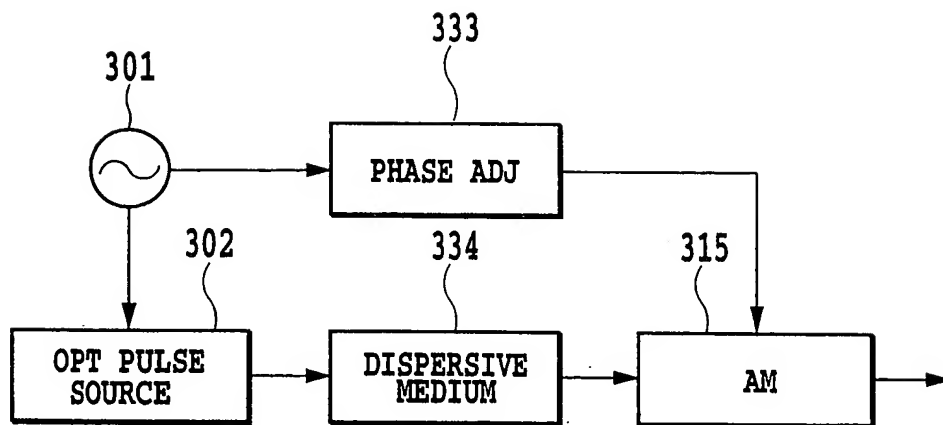


FIG.24

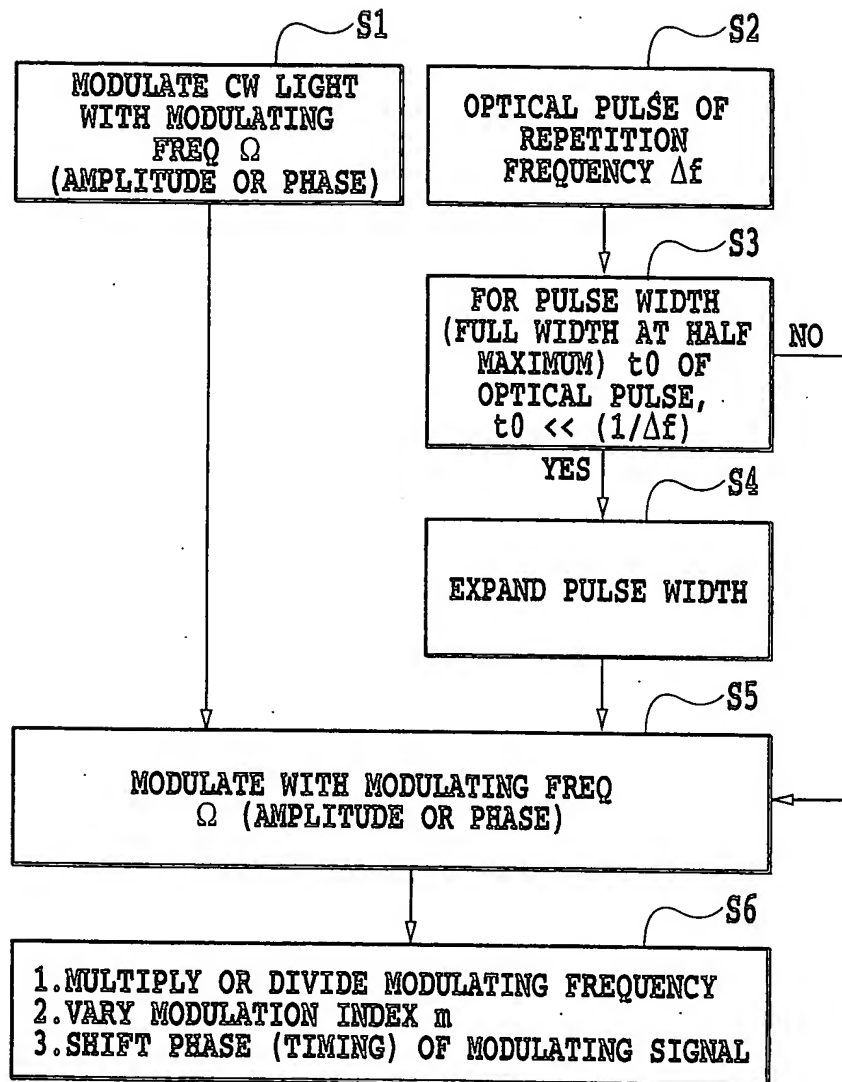


FIG.25

## COLLECTIVE MULTI-WAVELENGTH GENERATING APPARATUS

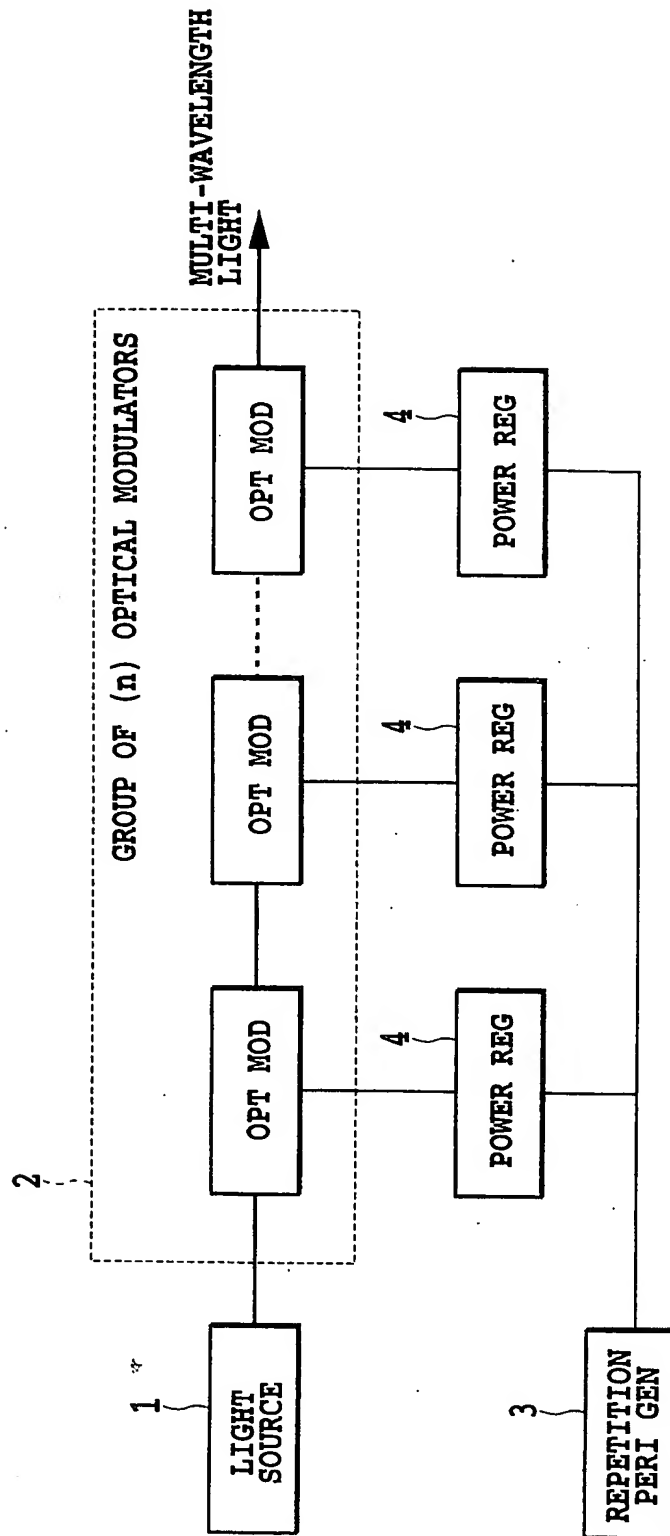


FIG.26

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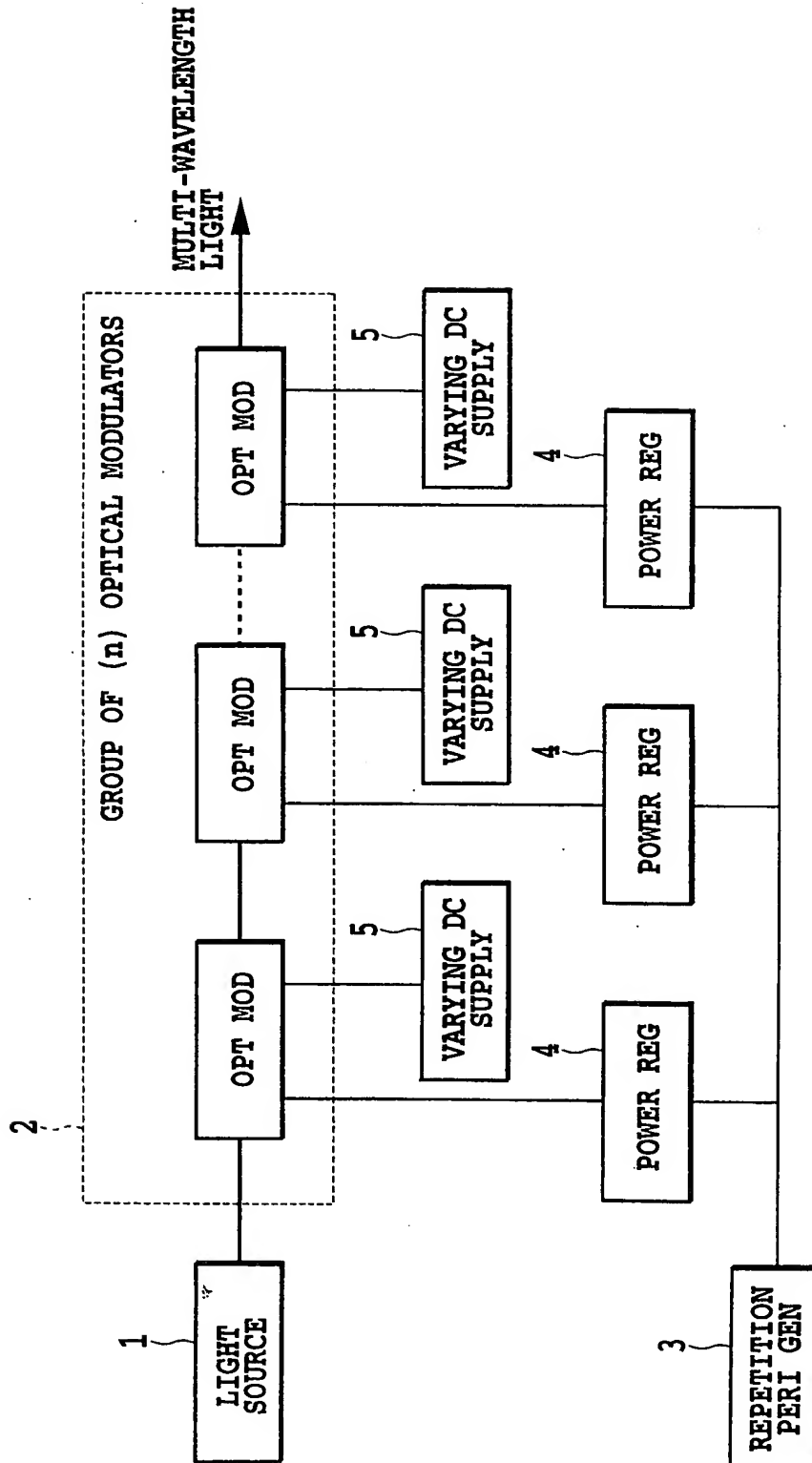


FIG. 27

# FLATTENING OPTICAL SPECTRUM BY MULTI-WAVELENGTH GENERATING APPARATUS

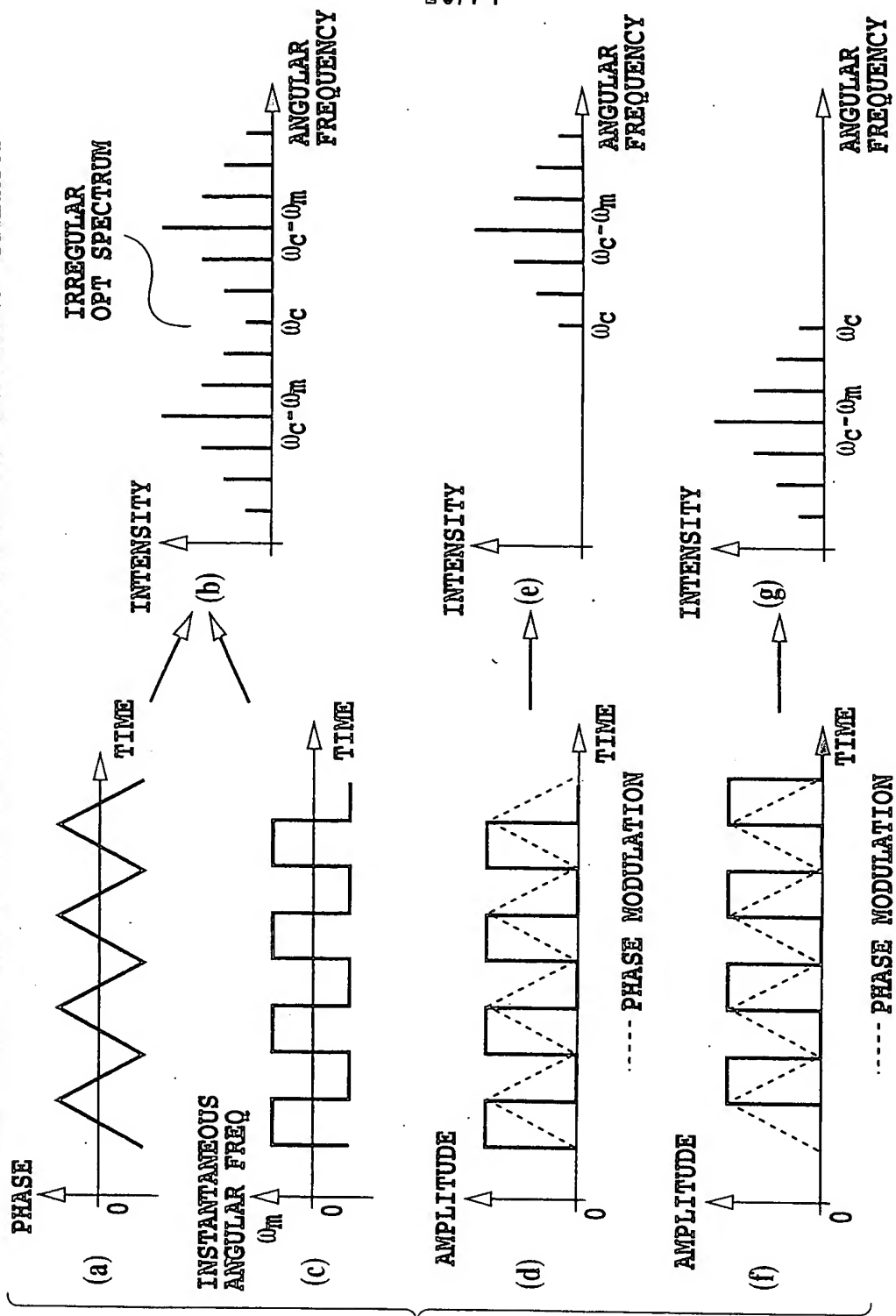
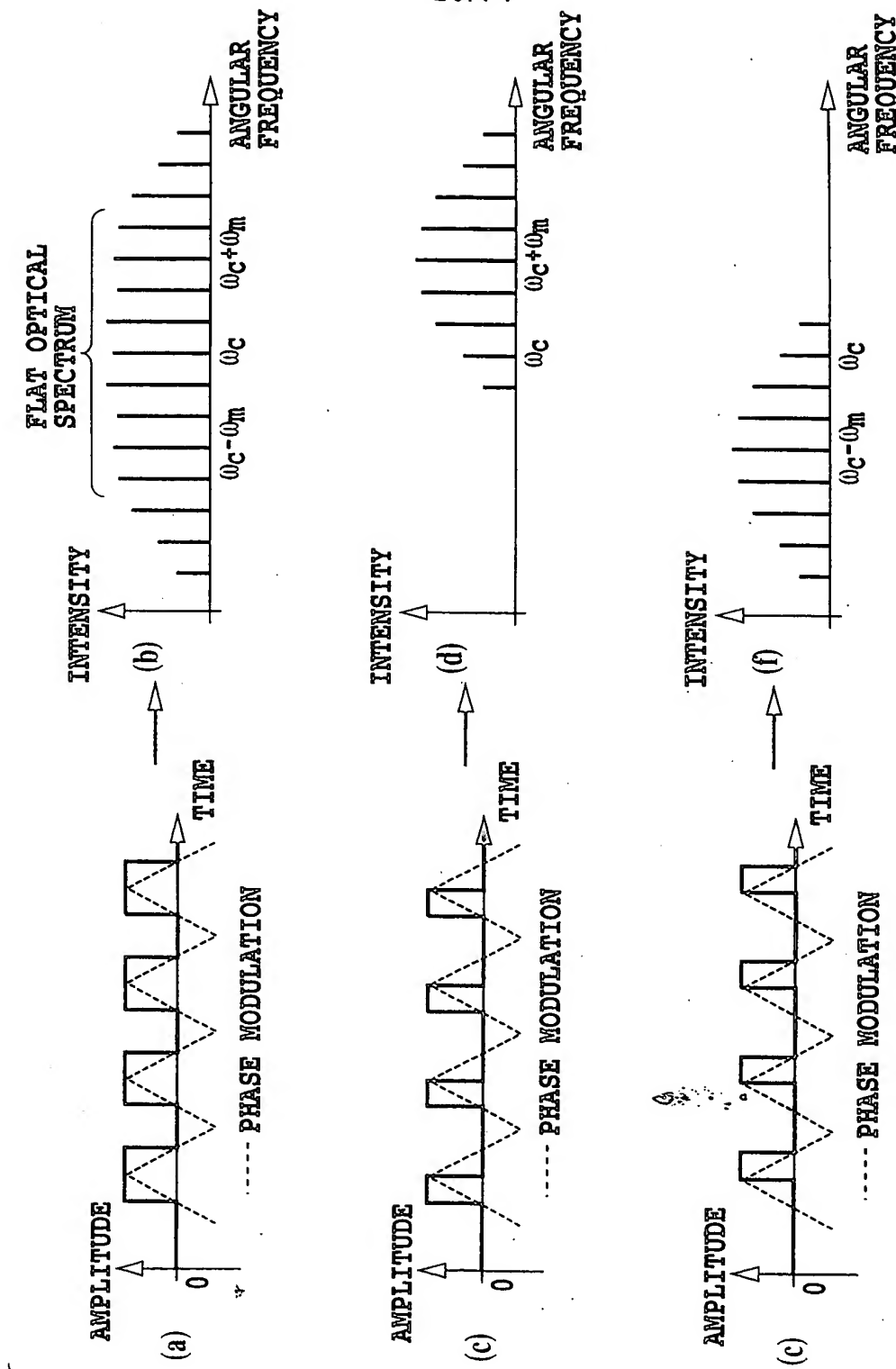


FIG.28

FIG. 29

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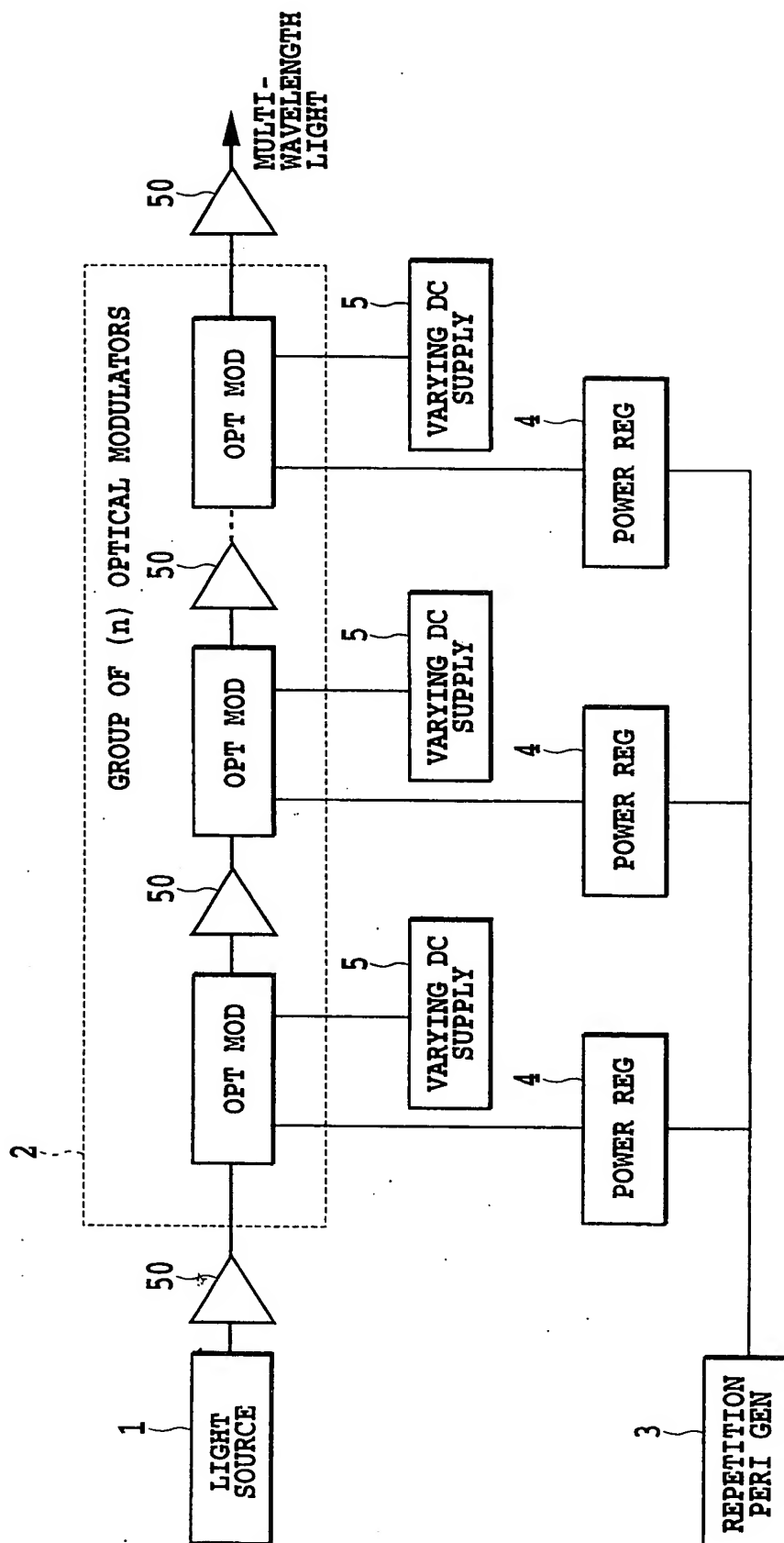


FIG.30

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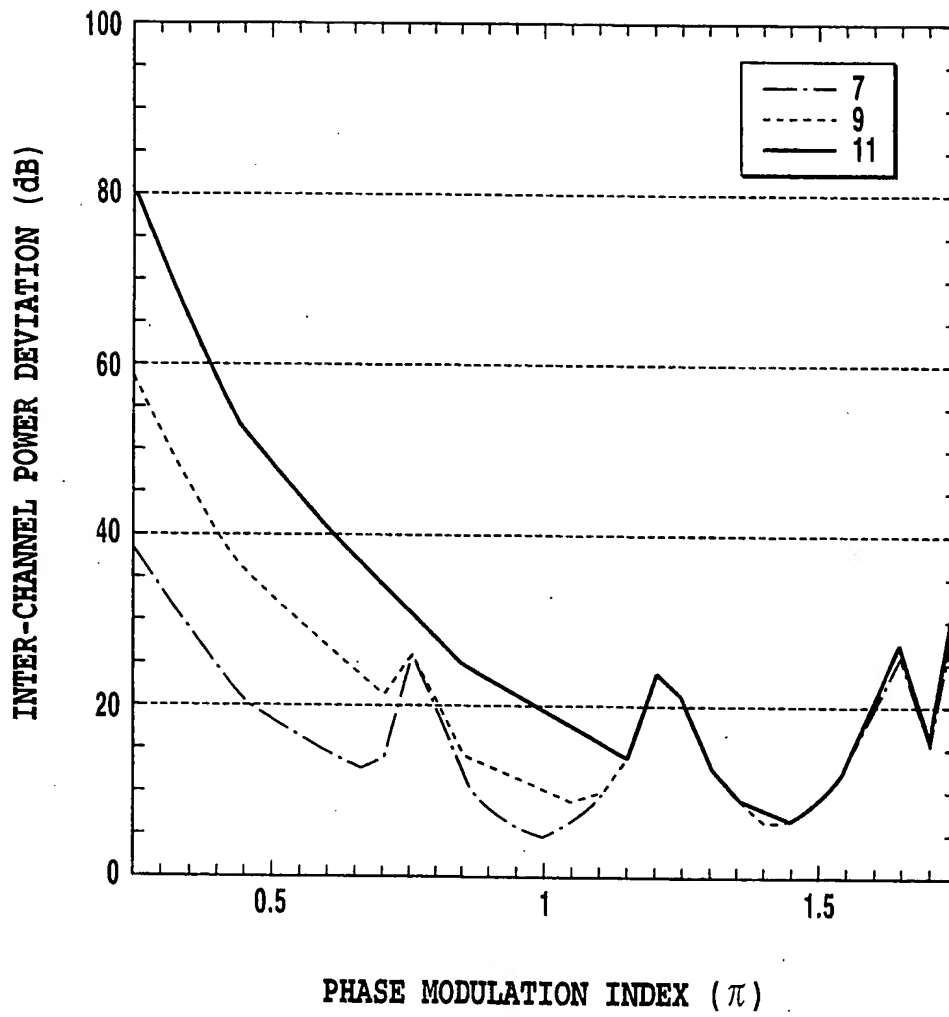
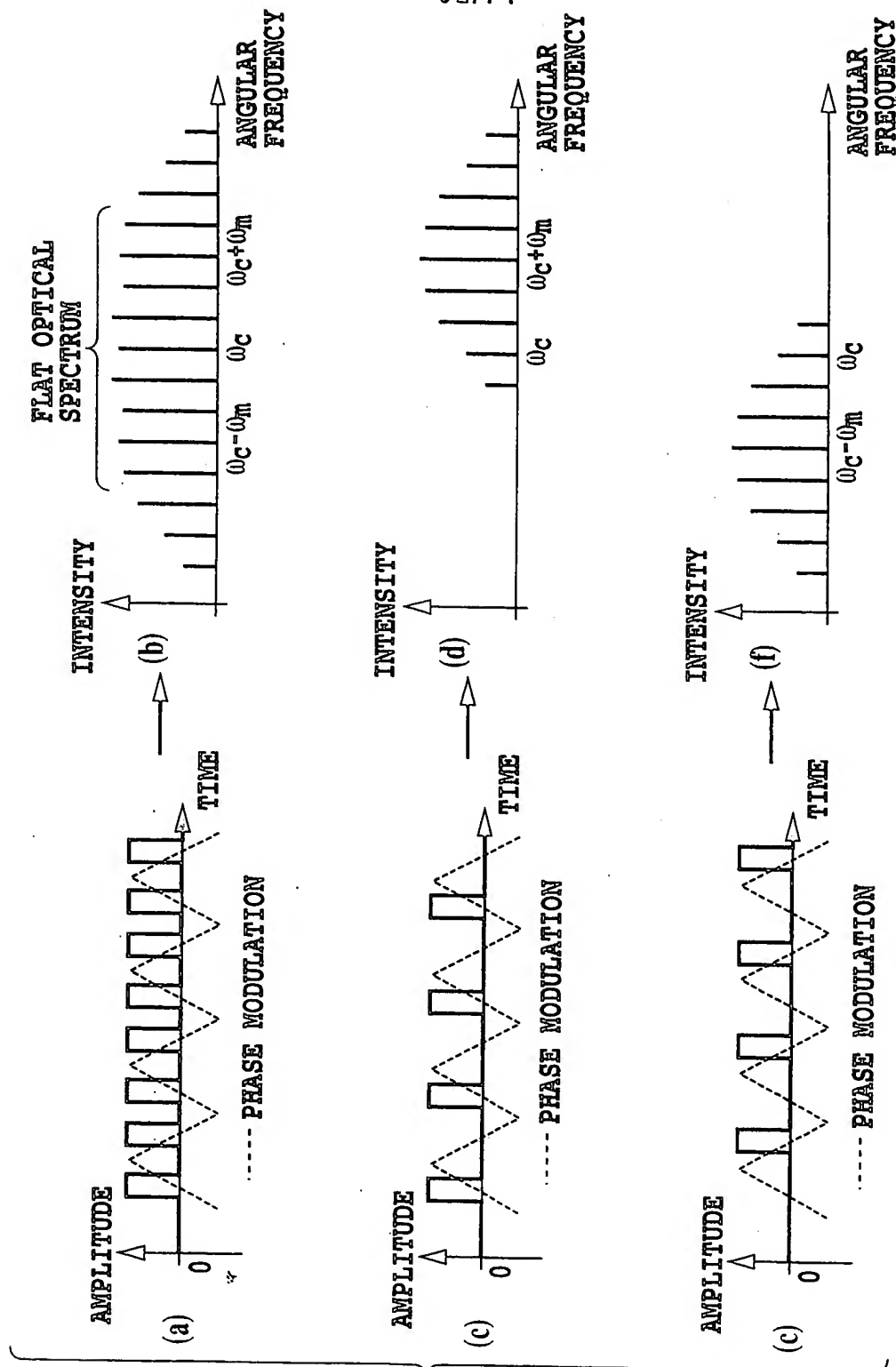


FIG.31



FIG.32

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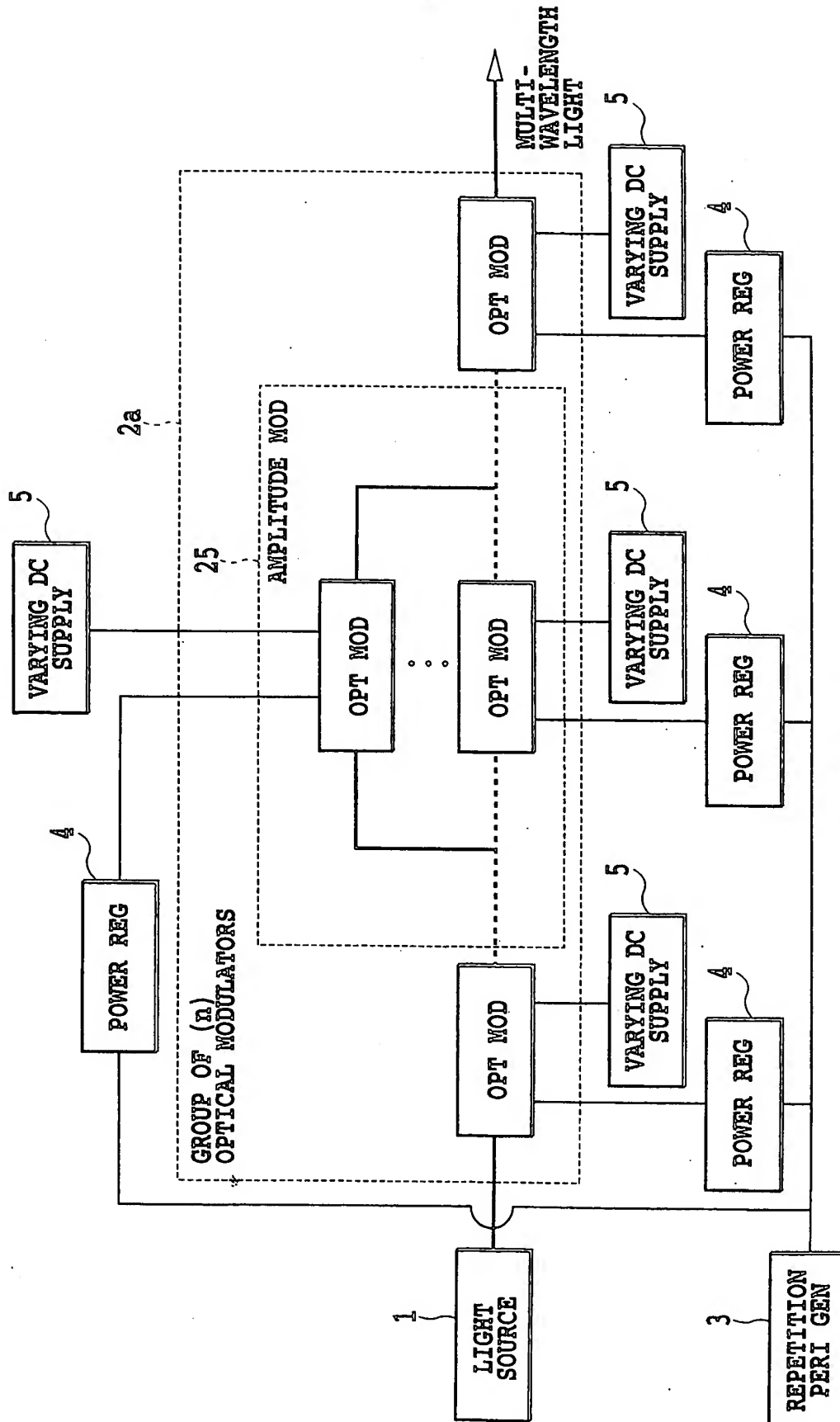


FIG. 33

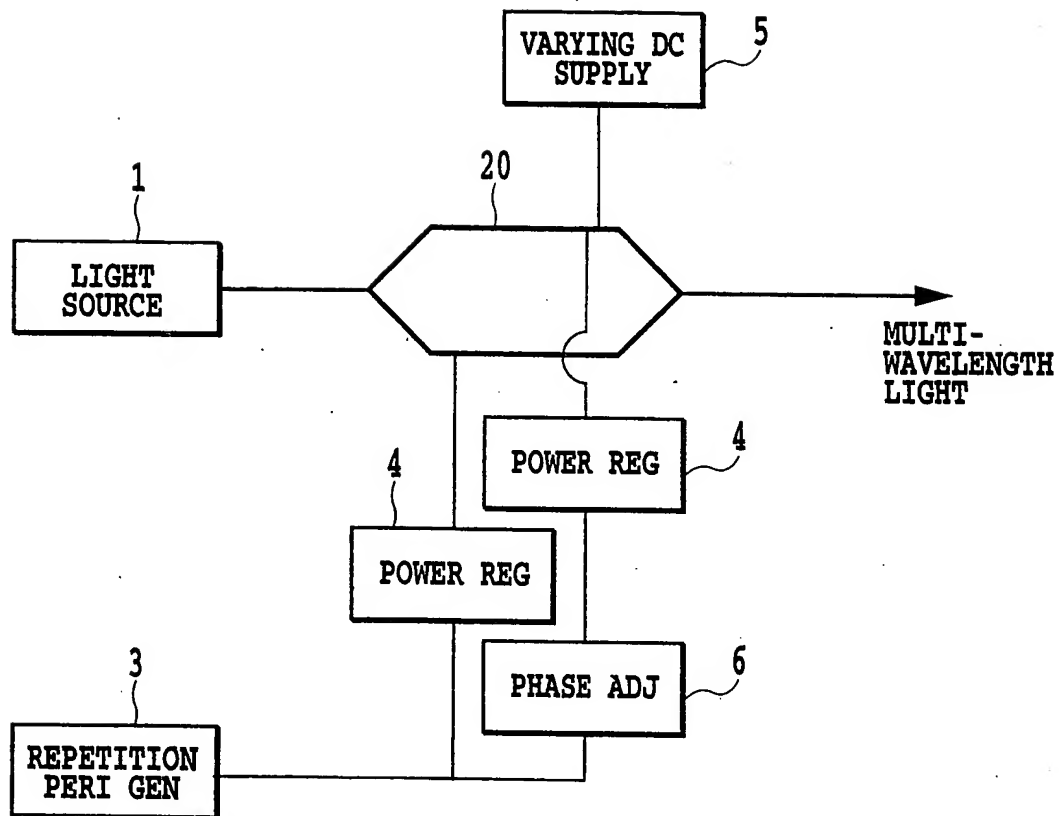


FIG.34



**FIG.35**

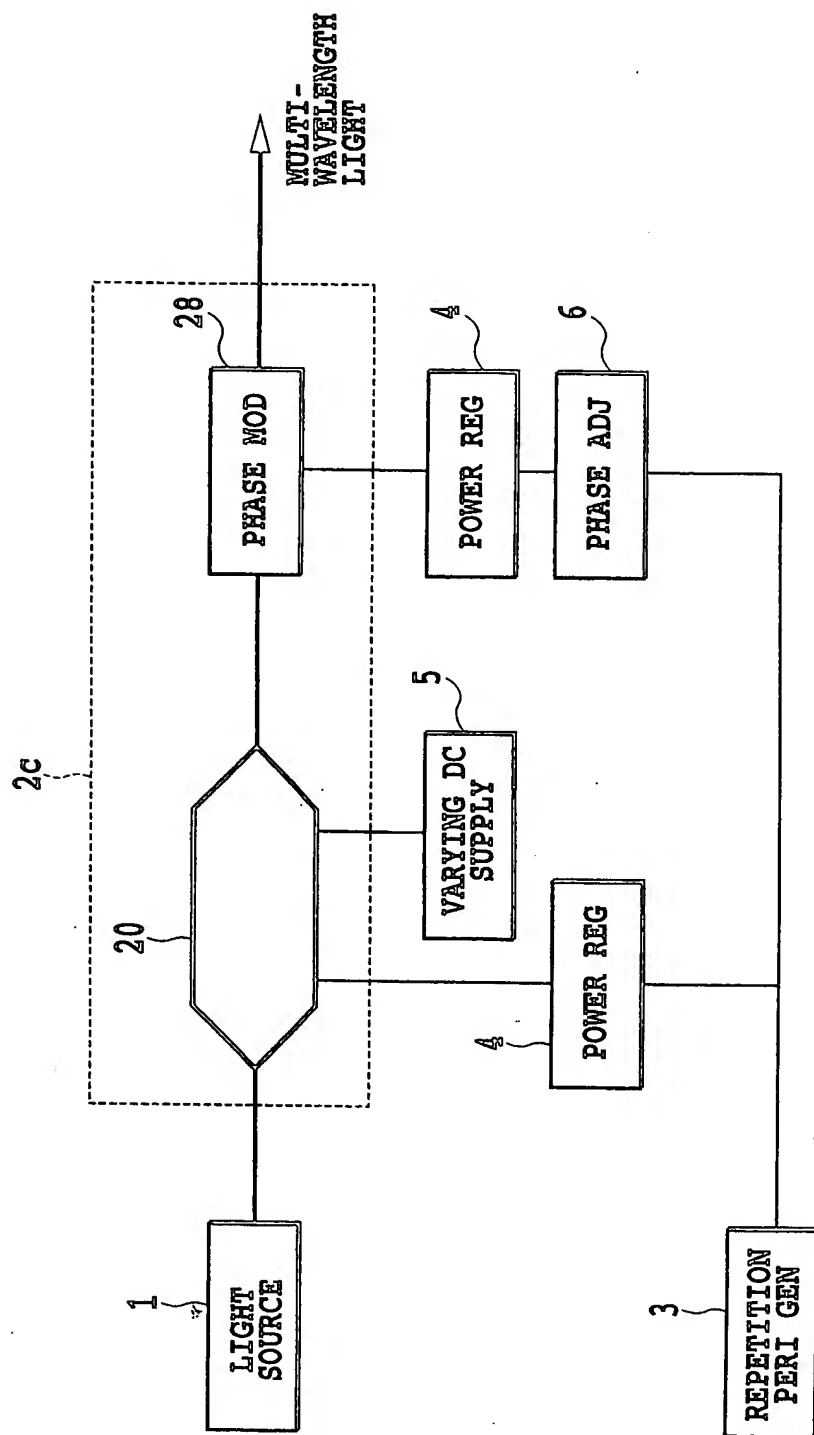


FIG. 36

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# EXPERIMENTAL RESULT USING WACH-ZEHNDER

2000 Apr 04 15:30

A:FIX /BLK

B:WRITE /BLK

C:FIX /BLK

▽:192.682THz -14.31dBm ▽-▽n:

▽

▽

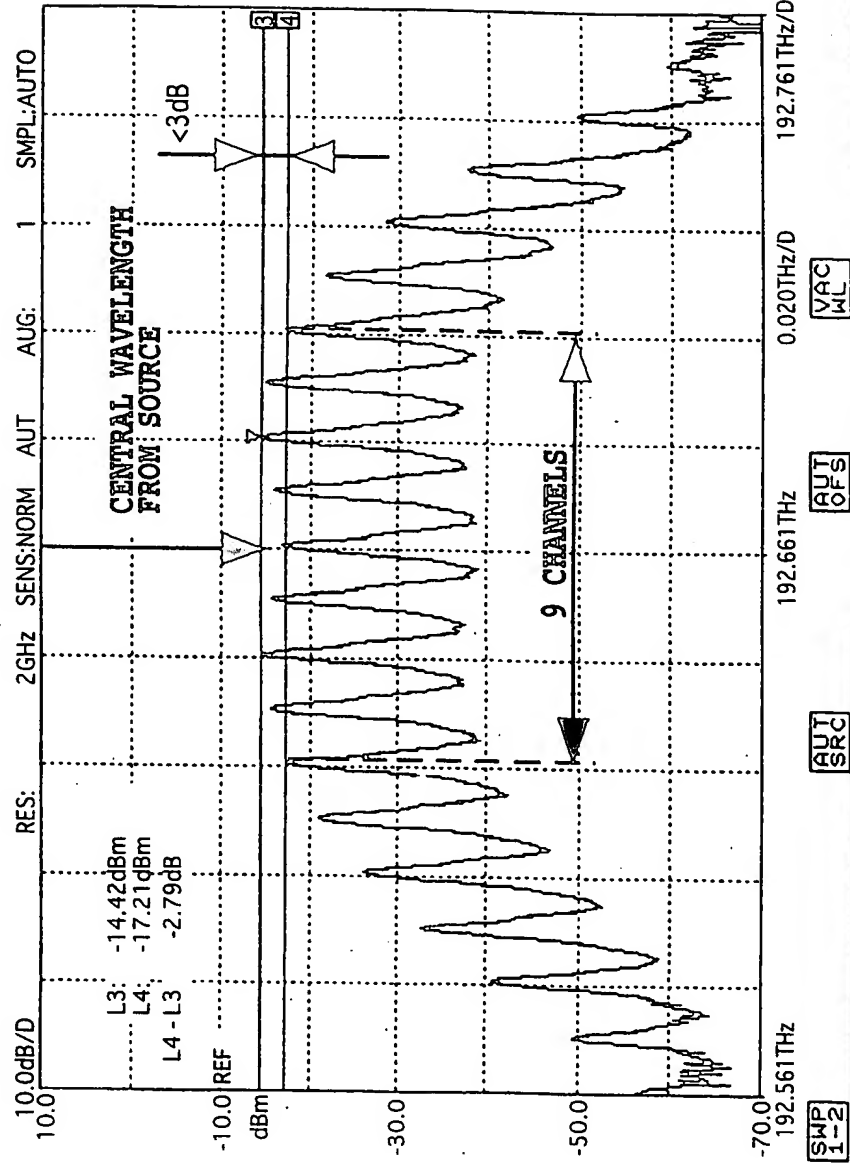


FIG.37

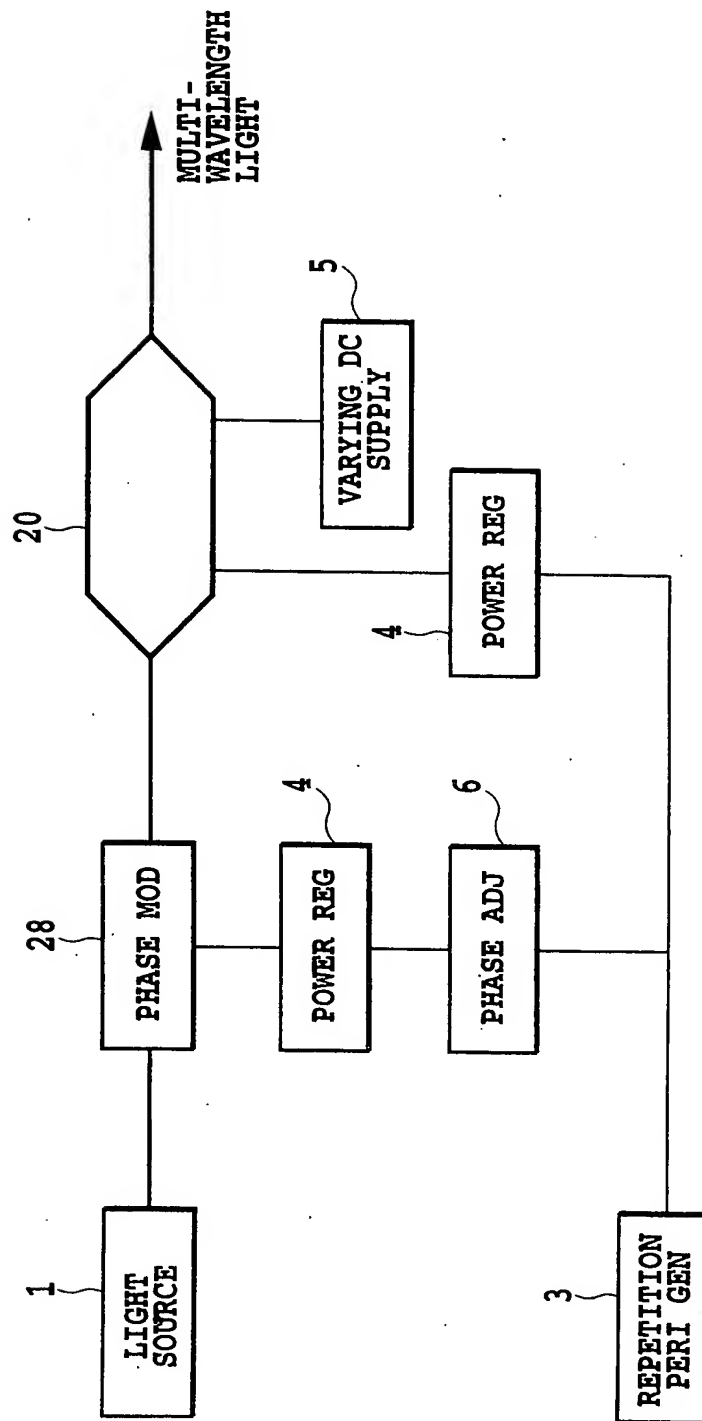


FIG.38

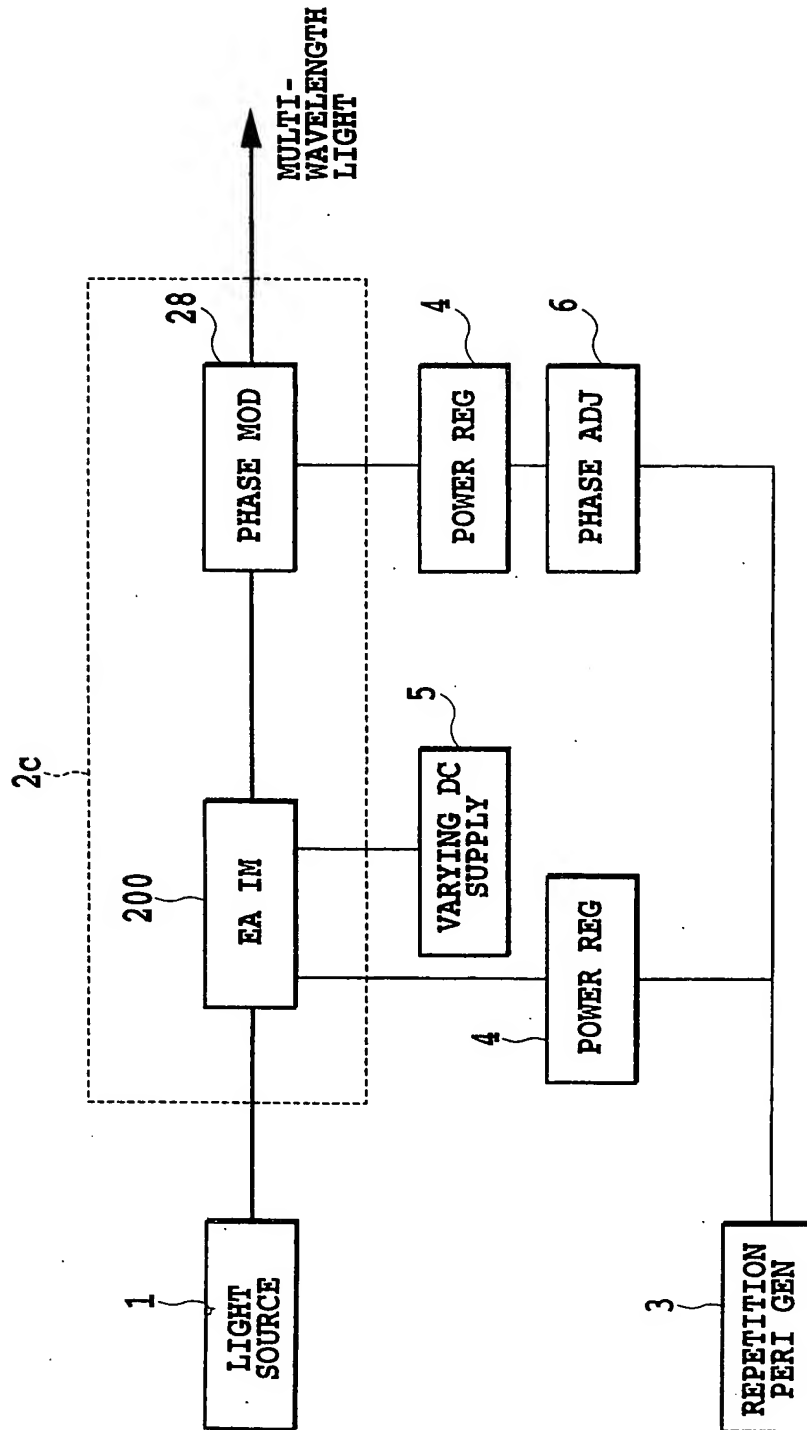


FIG.39

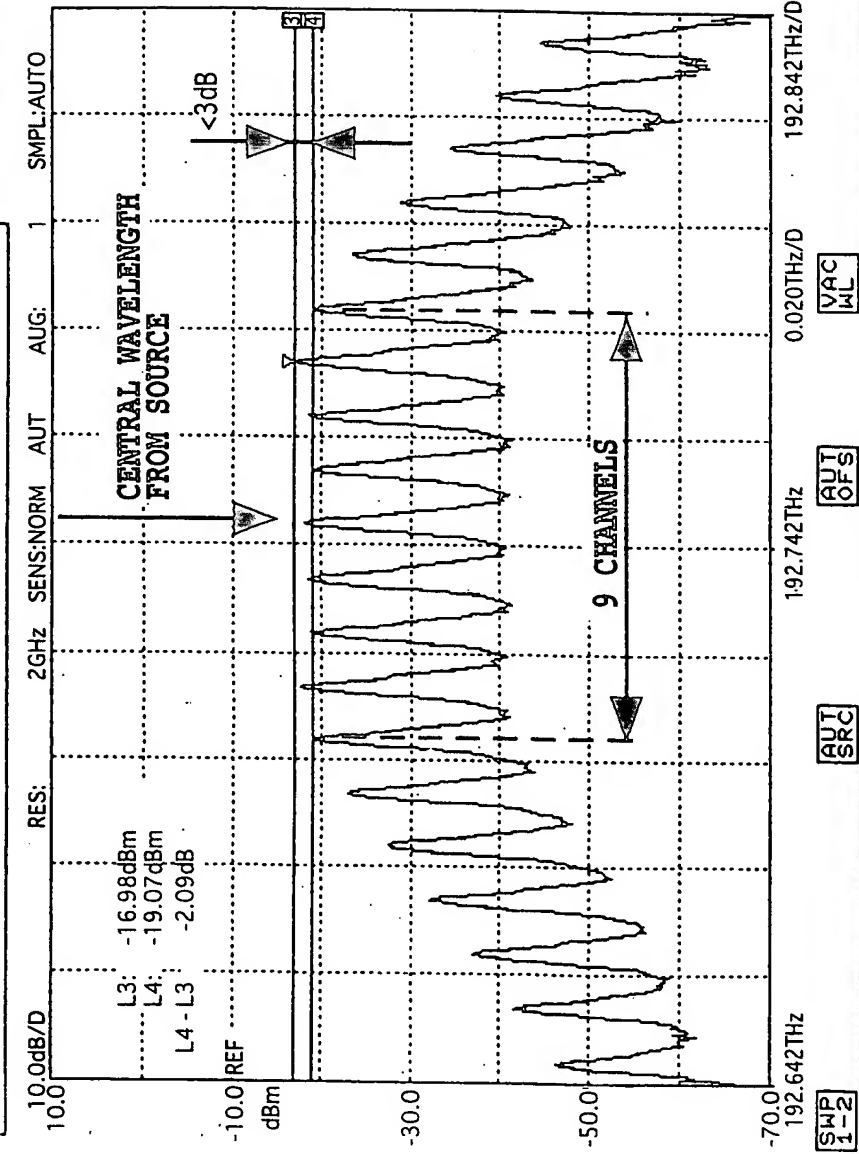


2000 Apr 07 14:33

A:FIX /BLK

B:WRITE /DSF

C:FIX /BLK



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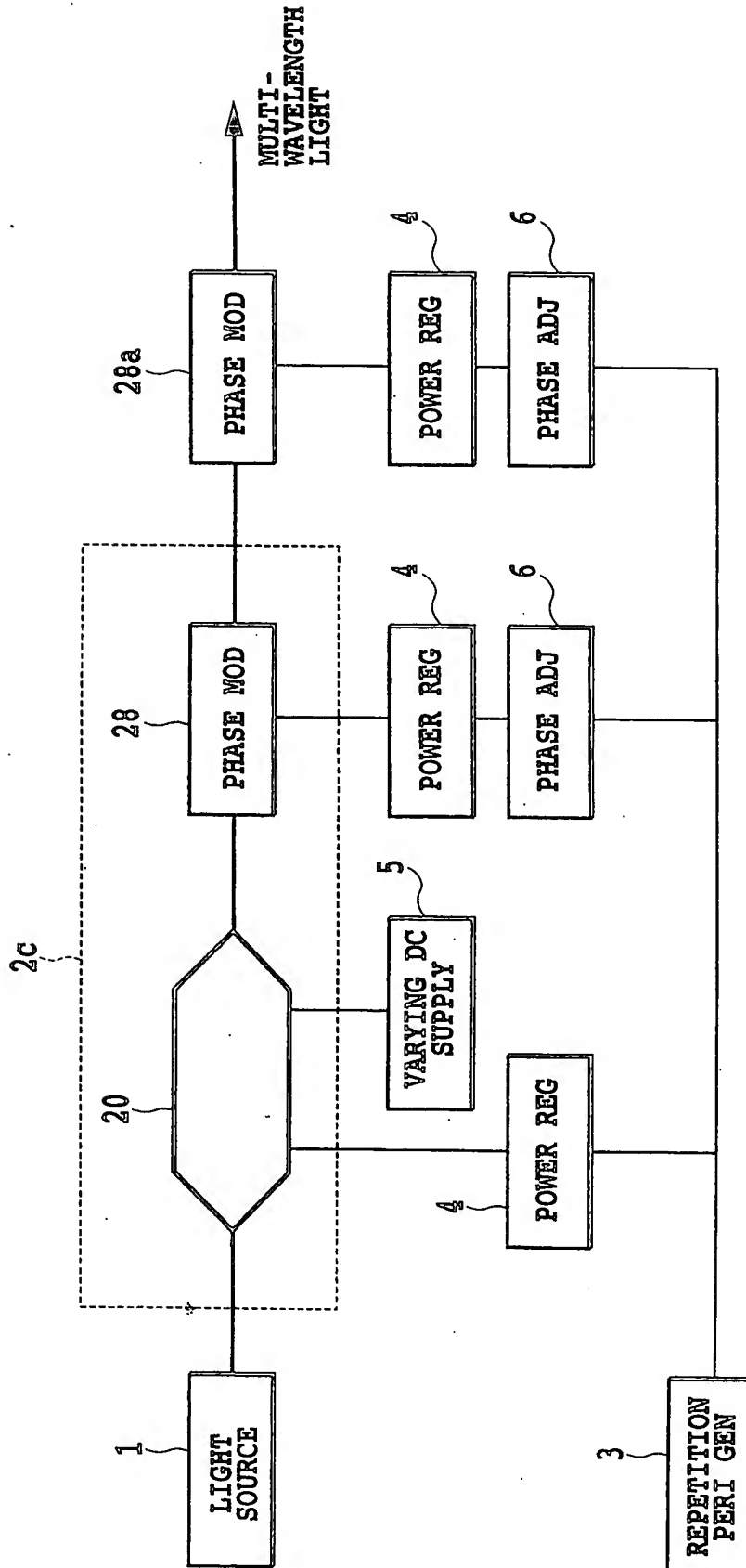


FIG. 41

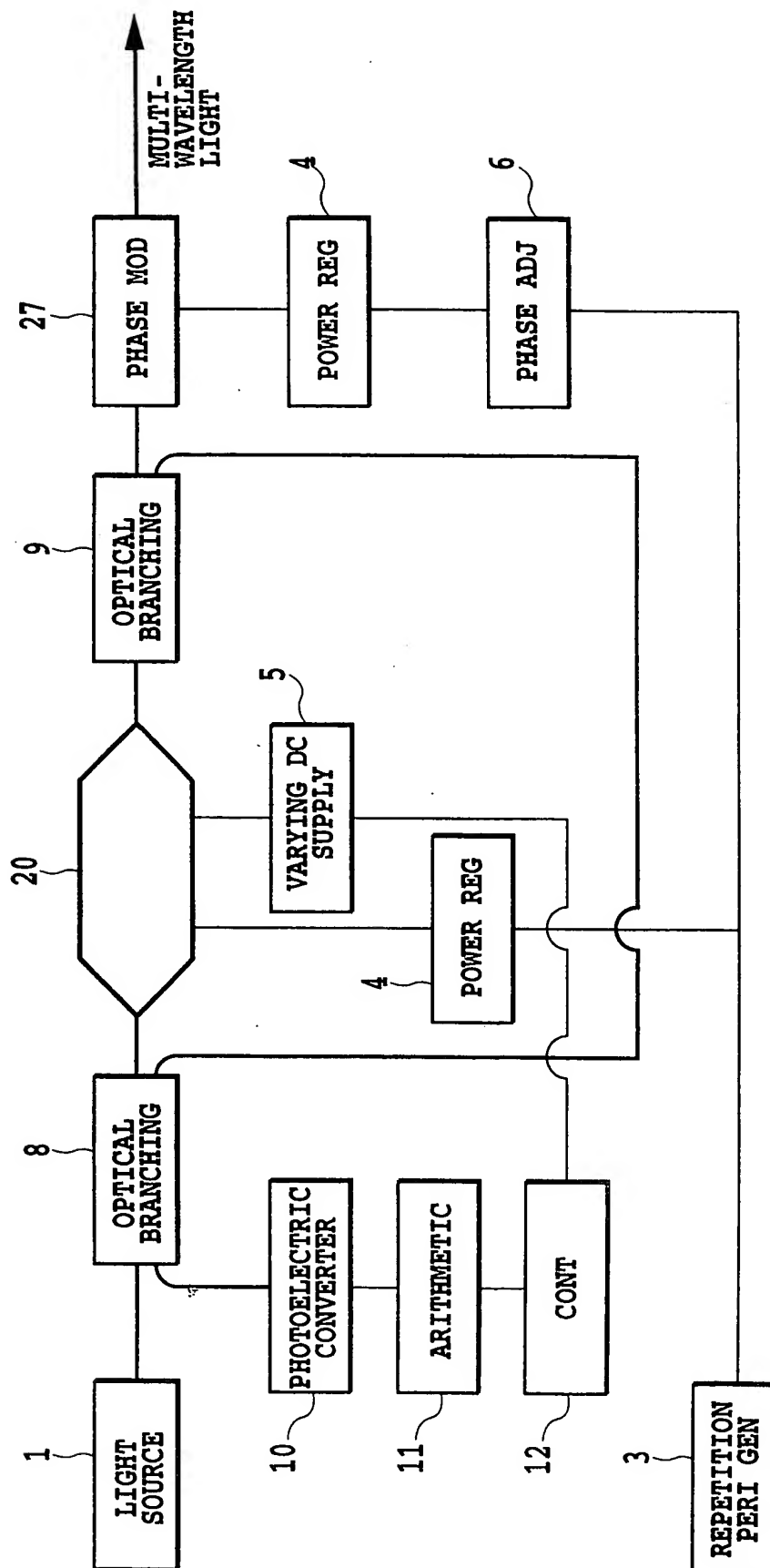


FIG.42

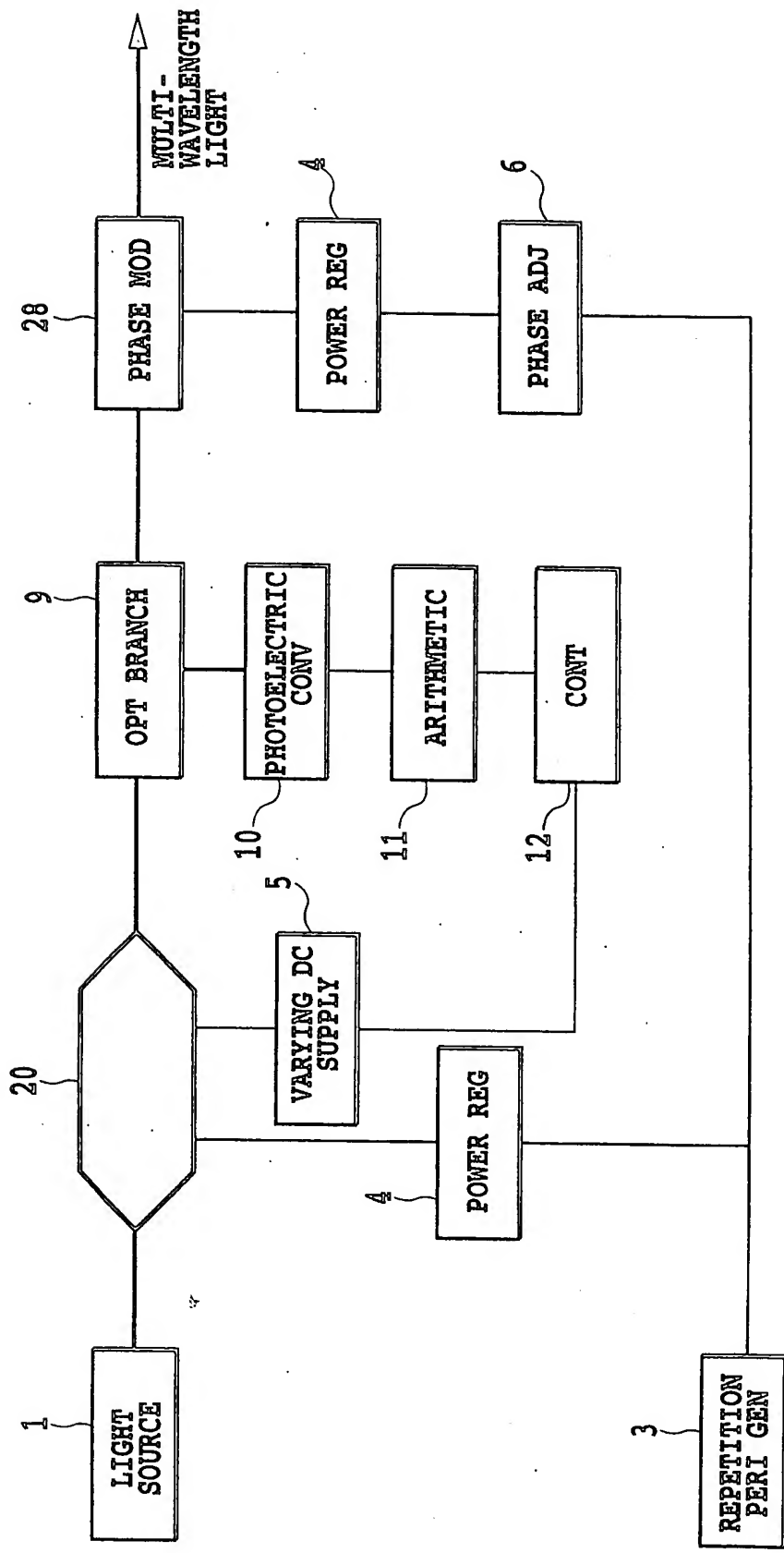


FIG. 43

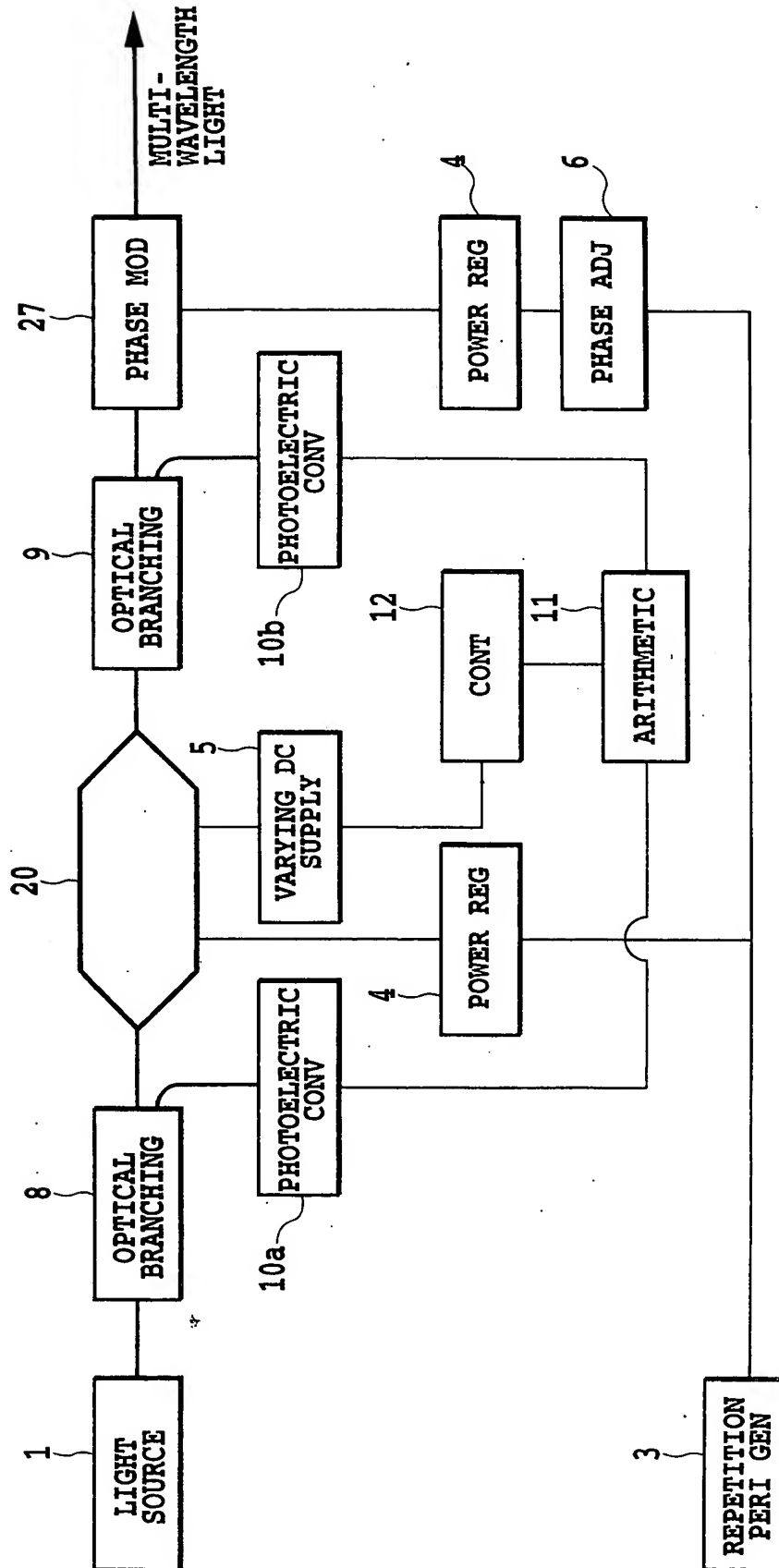


FIG.44

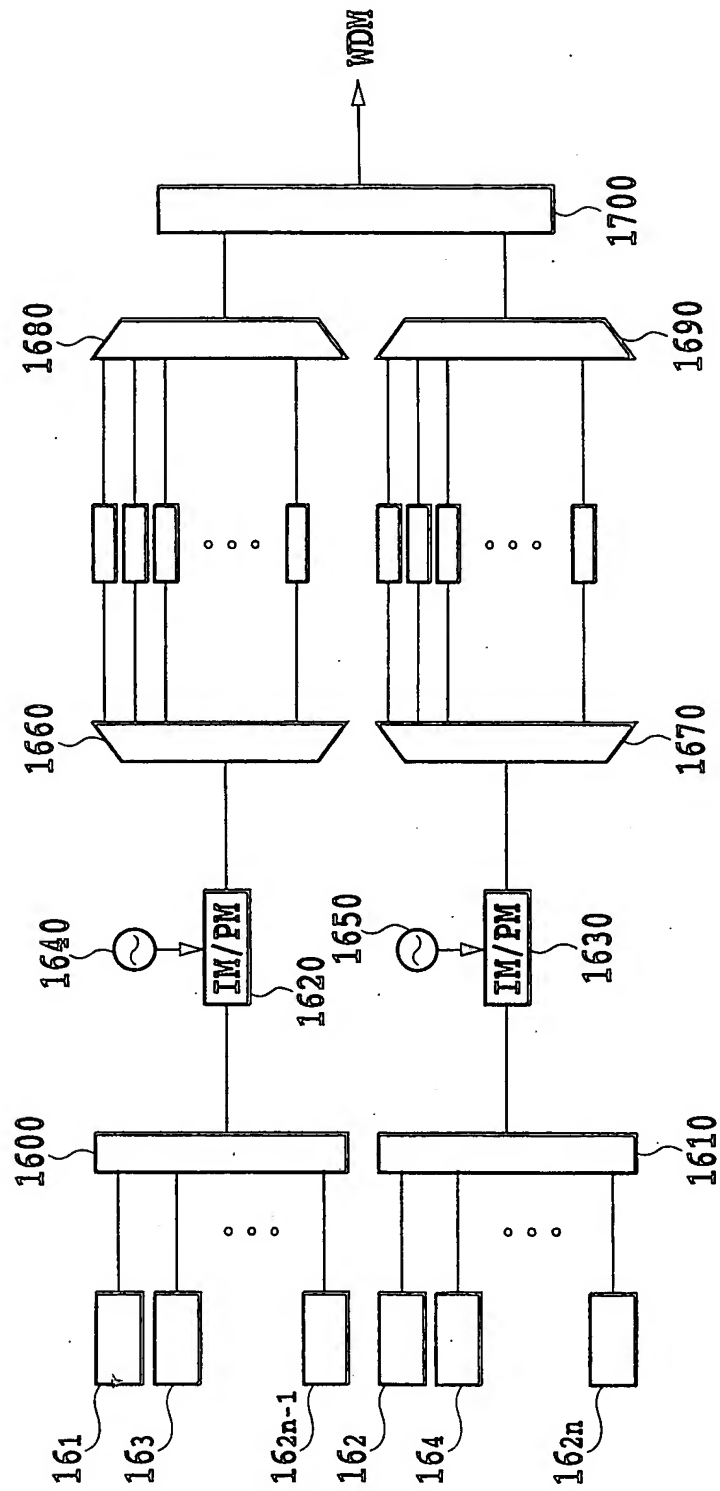


FIG. 45

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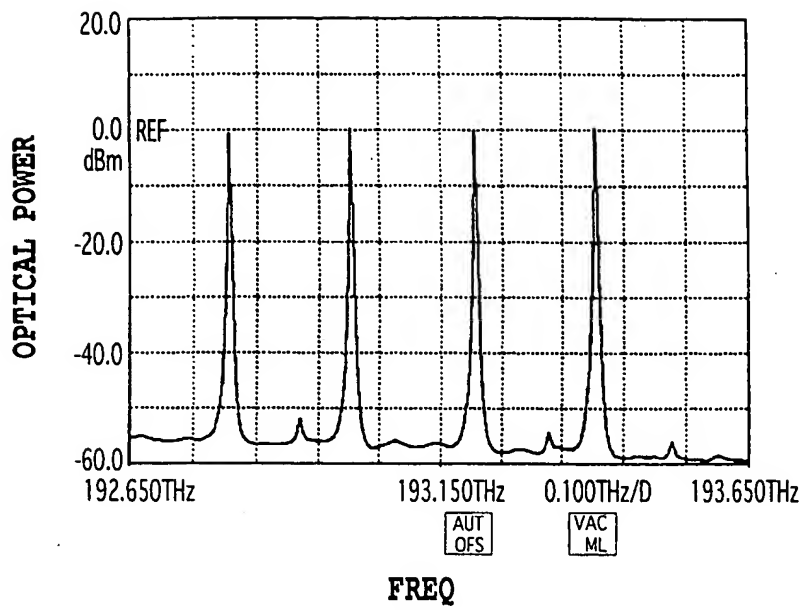


FIG.46A

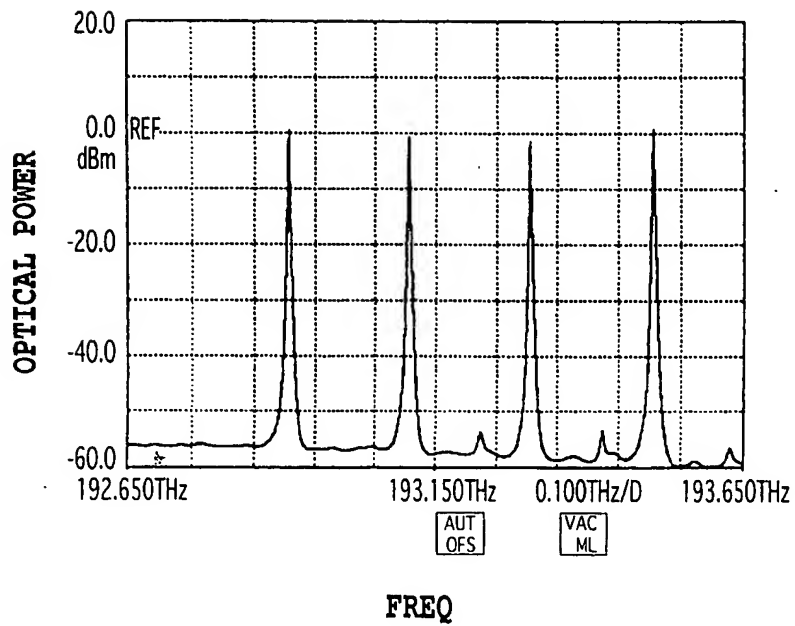


FIG.46B

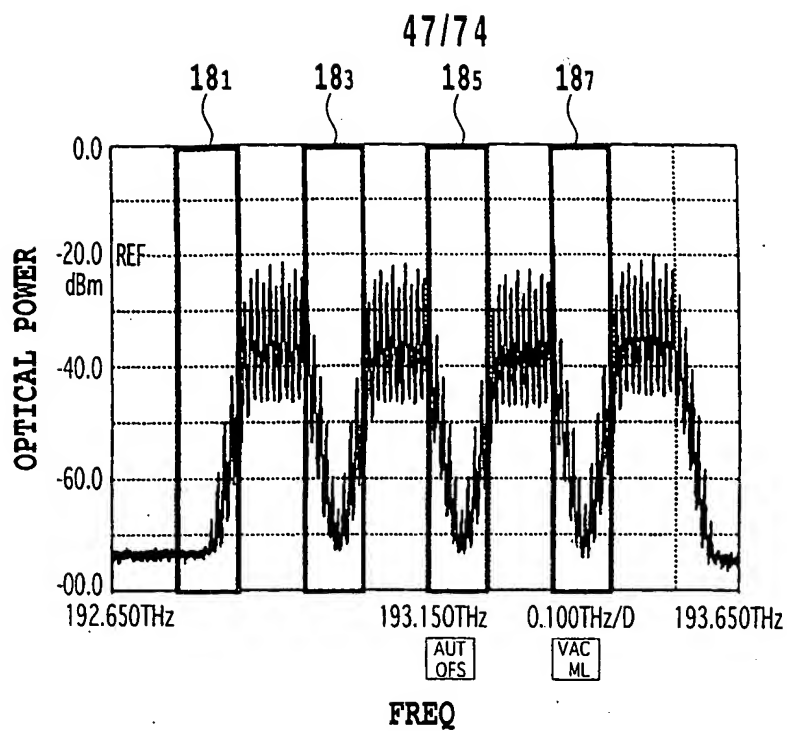


FIG.47A

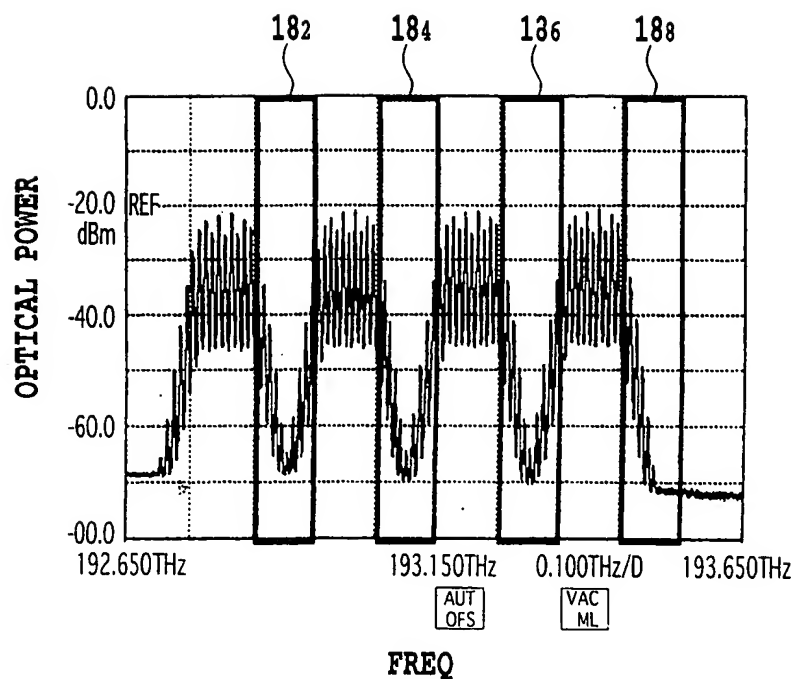


FIG.47B



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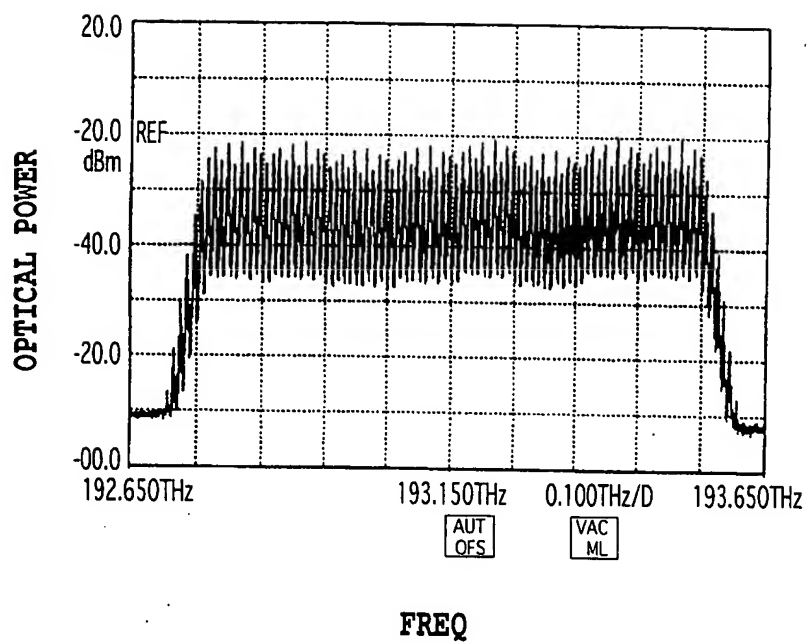


FIG.48

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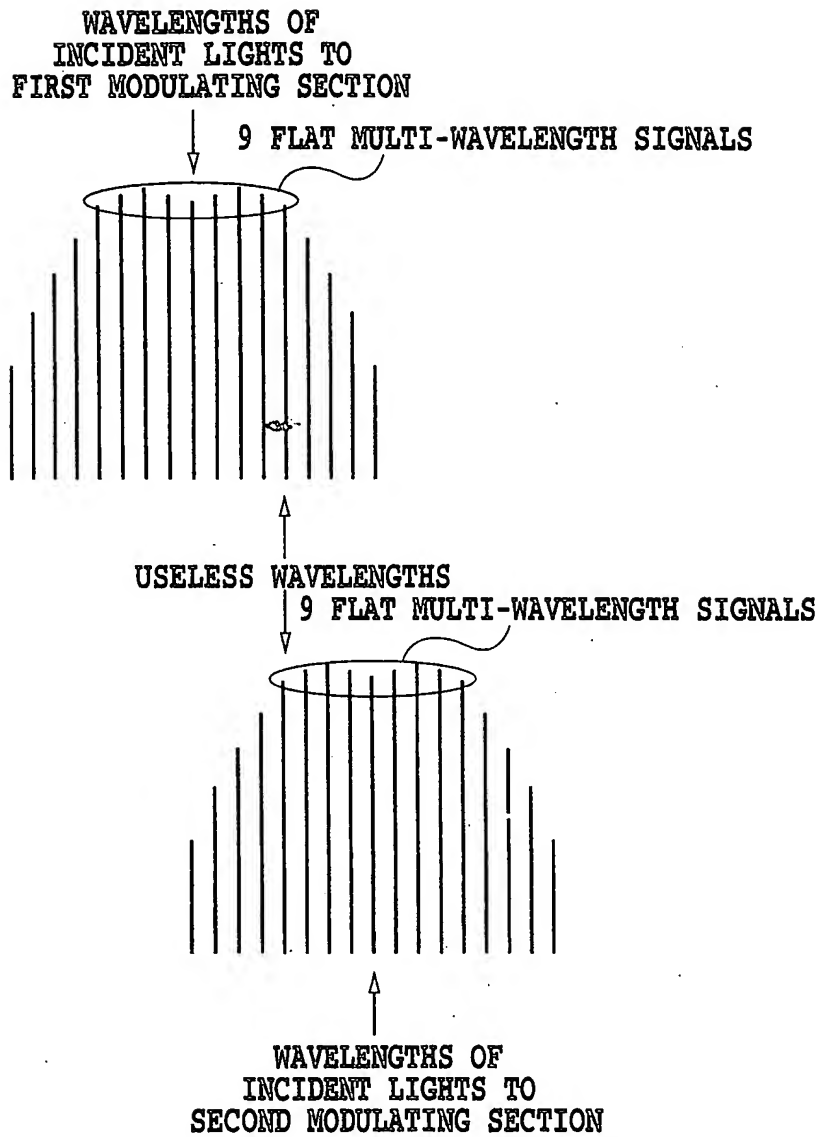


FIG.49A

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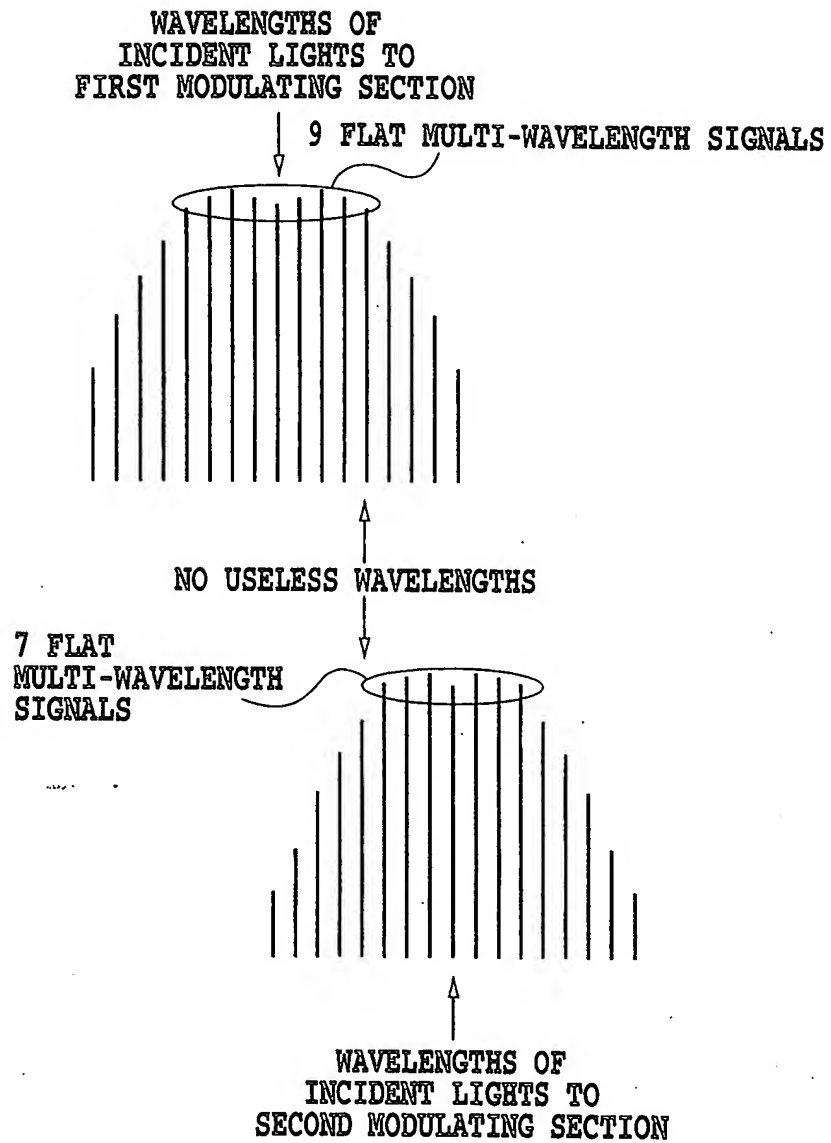


FIG. 49B

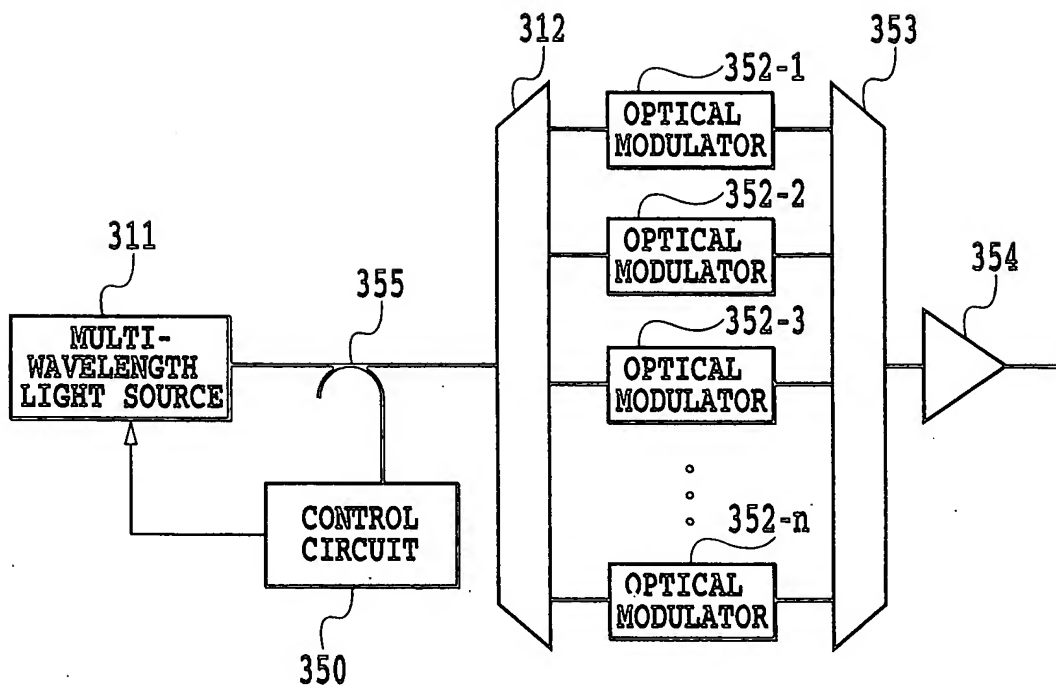


FIG. 50

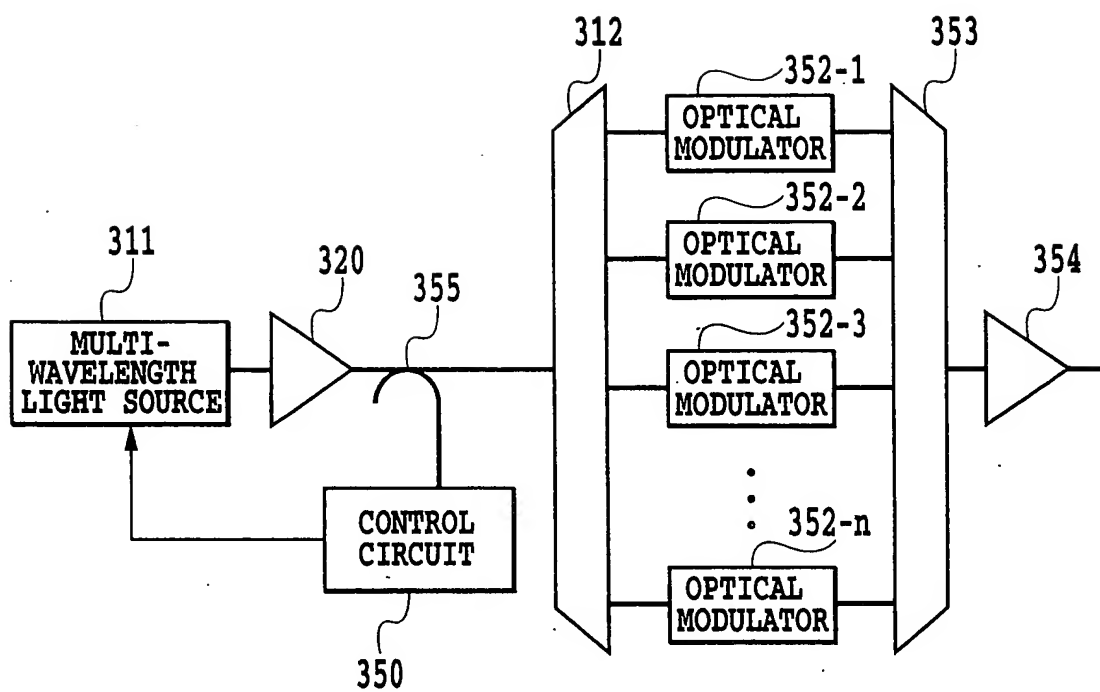


FIG.51

WAVELENGTH-MULTIPLEXED TRANSMISSION SYSTEM USING  
COHERENT MULTI-WAVELENGTH SIGNAL GENERATING APPARATUS

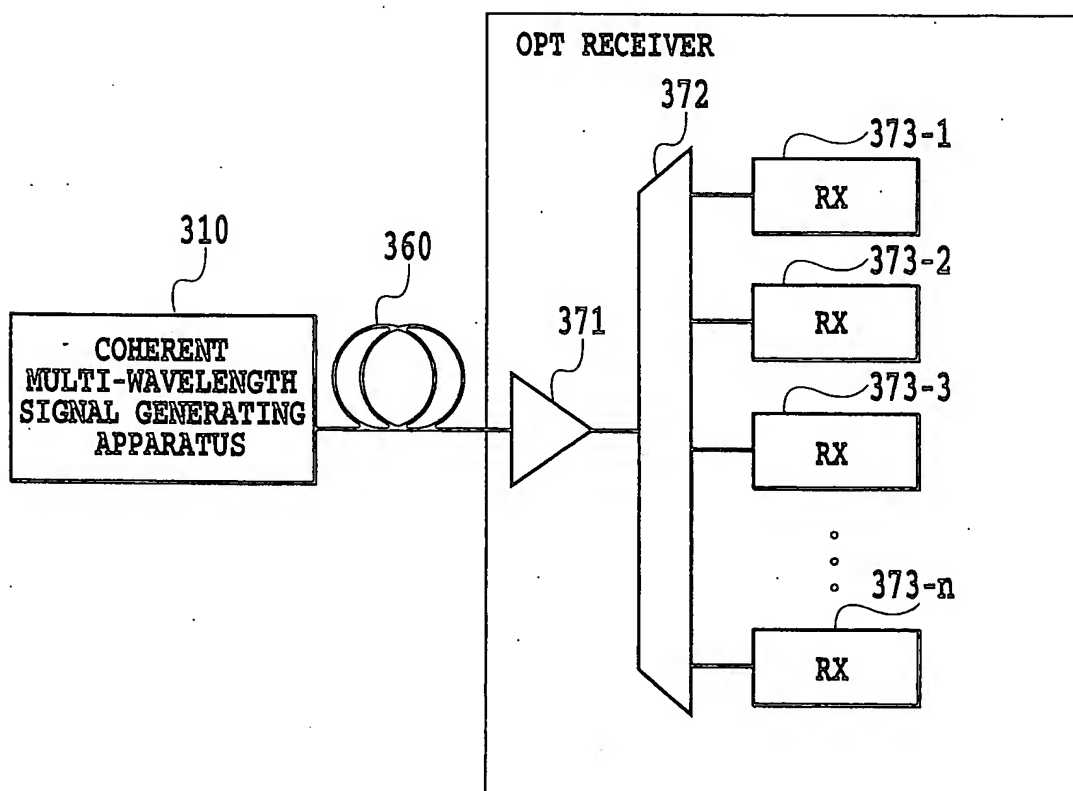


FIG.52

EXAMPLE OF FIRST CONFIGURATION OF  
MULTI-WAVELENGTH LIGHT SOURCE

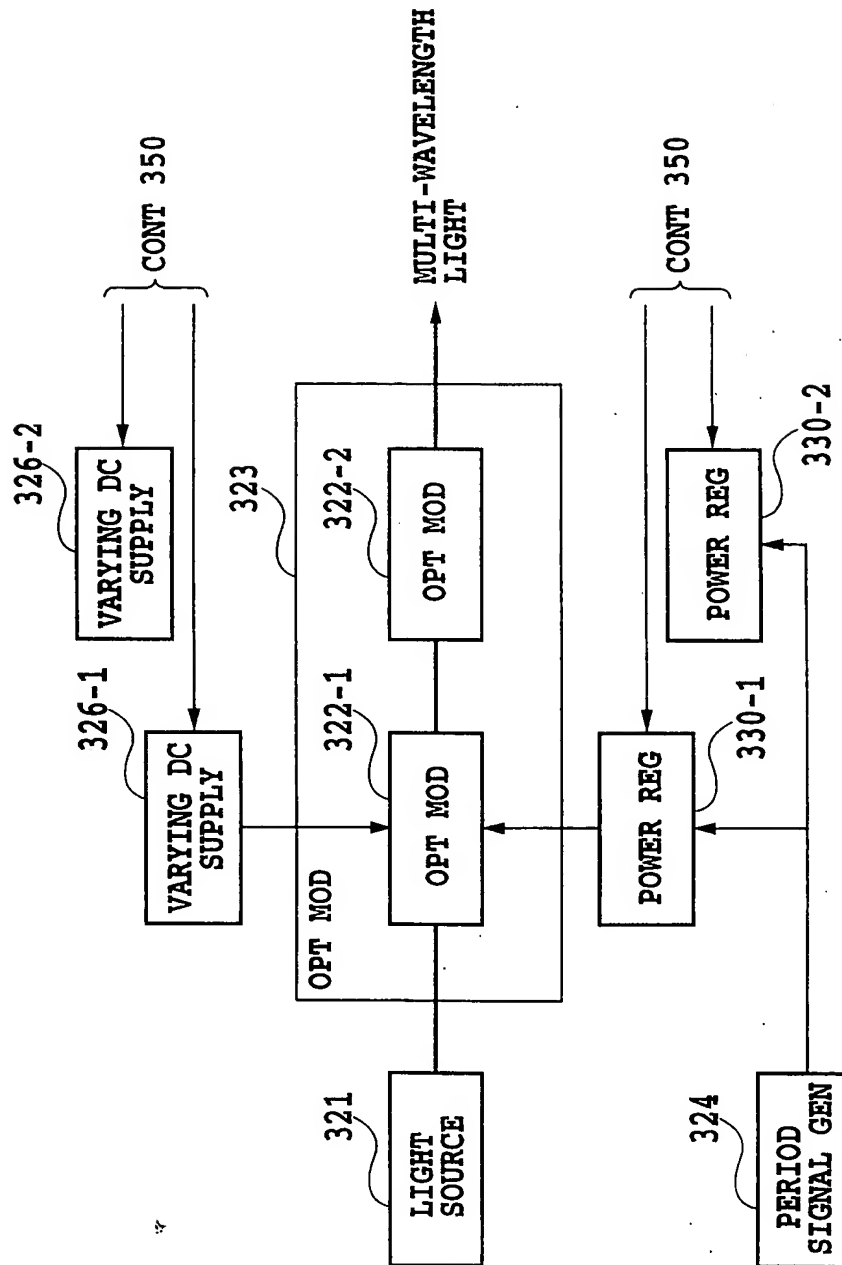
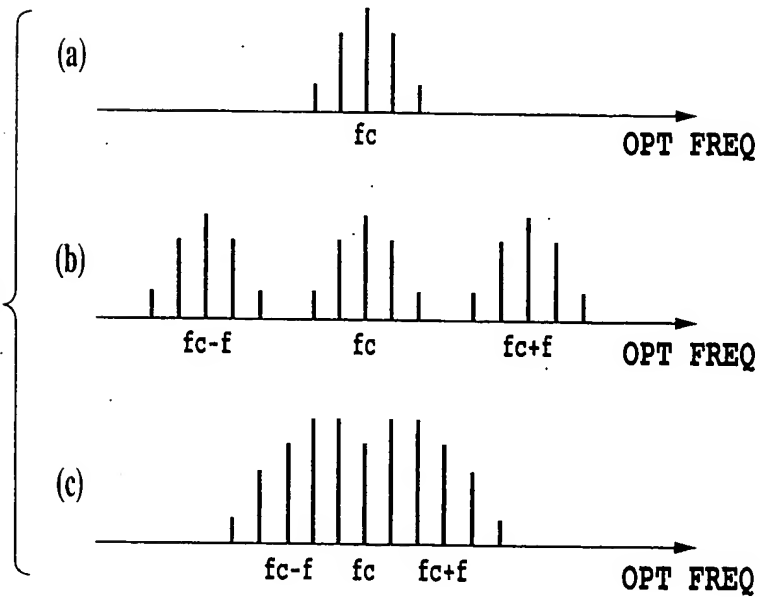


FIG.53

FIG. 53 PRINCIPLE OF GENERATION OF  
MULTI-WAVELENGTH LIGHT FROM  
MULTI-WAVELENGTH LIGHT SOURCE

FIG.54





SHAPE CONTROL OF OPTICAL SPECTRUM USING INTENSITY  
AND PHASE MODULATORS AS OPTICAL MODULATING SECTION

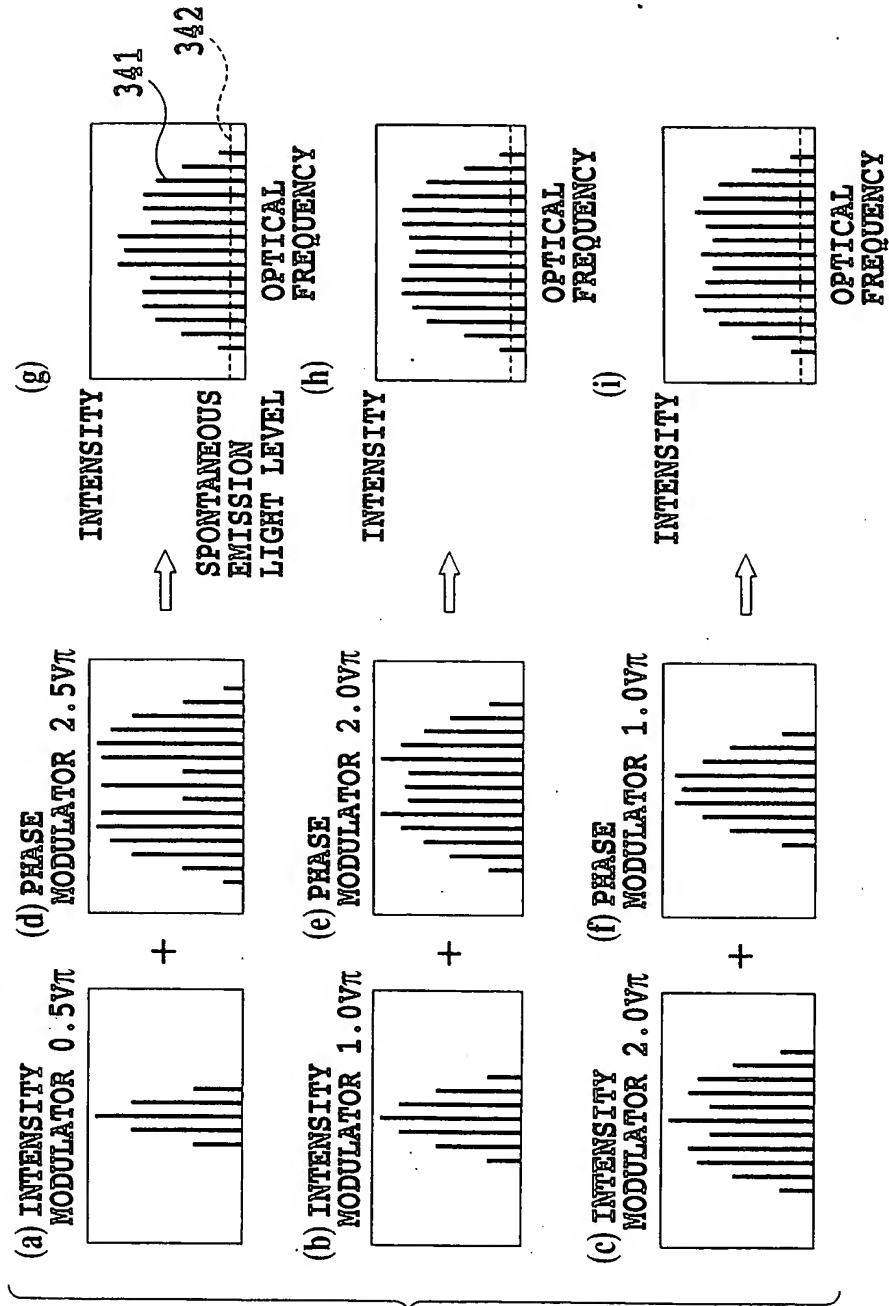


FIG. 55

OPTICAL SPECTRUM OF MULTI-WAVELENGTH  
LIGHT AMPLIFIED BY OPTICAL AMPLIFIER

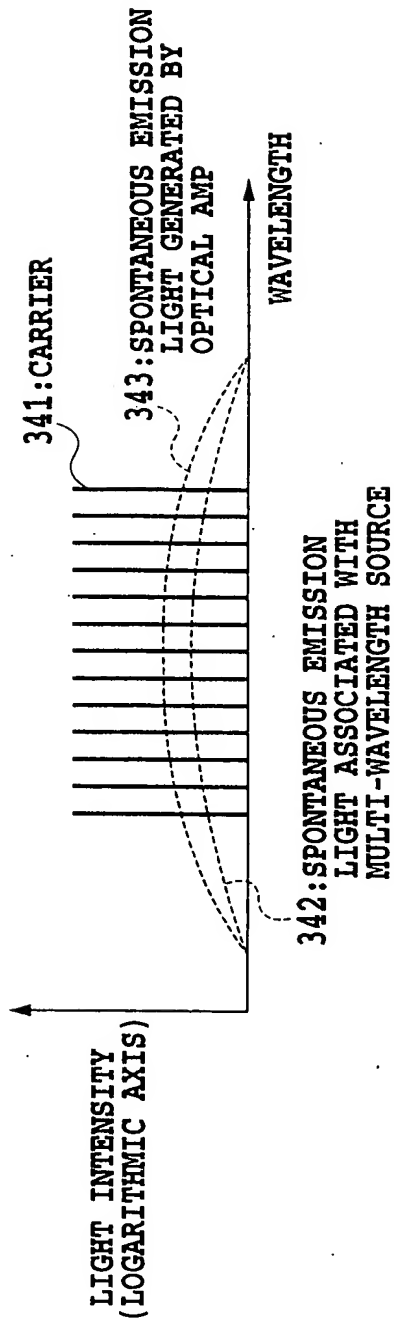


FIG.56

EXAMPLE OF SECOND CONFIGURATION OF  
MULTI-WAVELENGTH LIGHT SOURCE

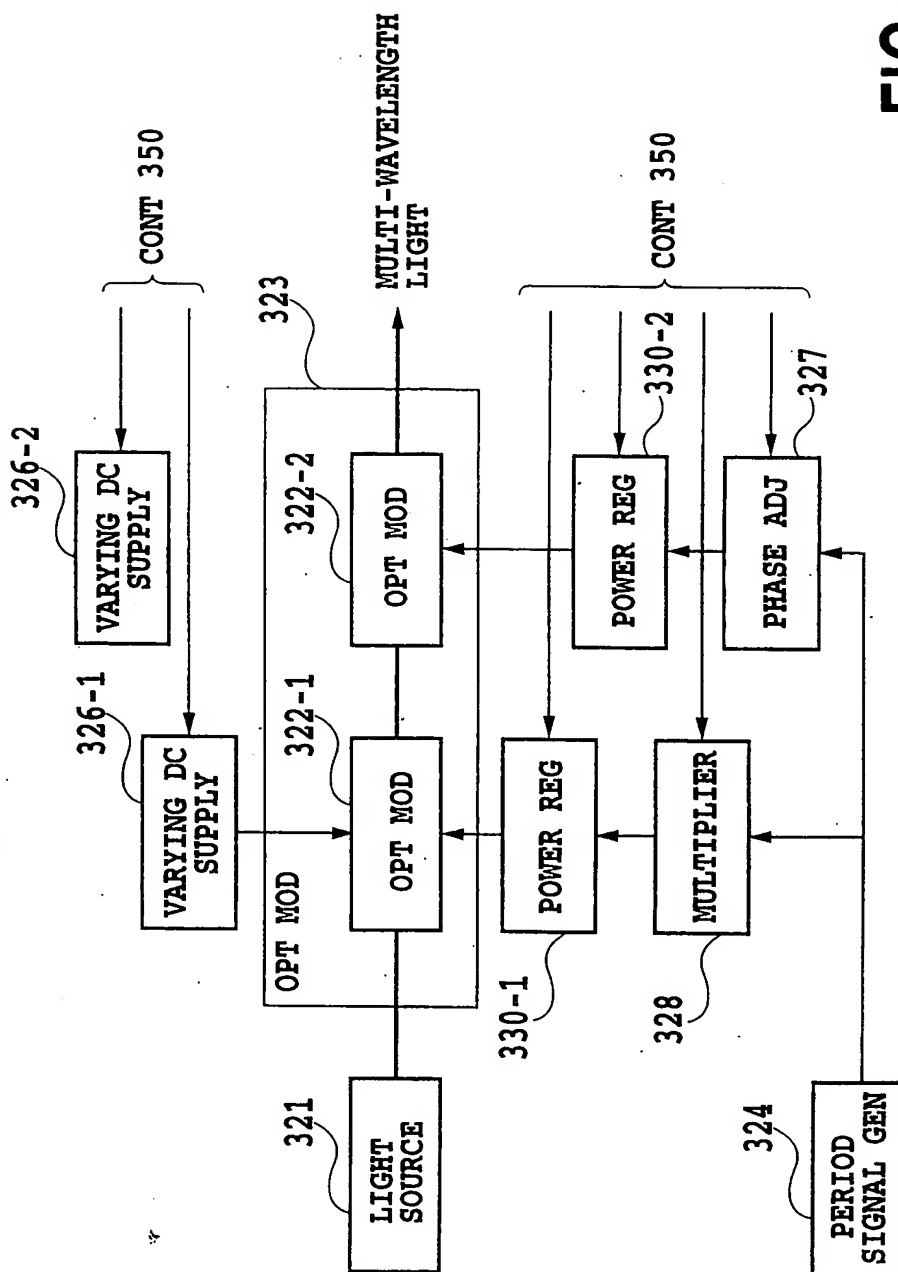


FIG.57

SHAPE CONTROL OF OPTICAL SPECTRUM  
BY REGULATING PHASES OF PERIOD SIGNALS

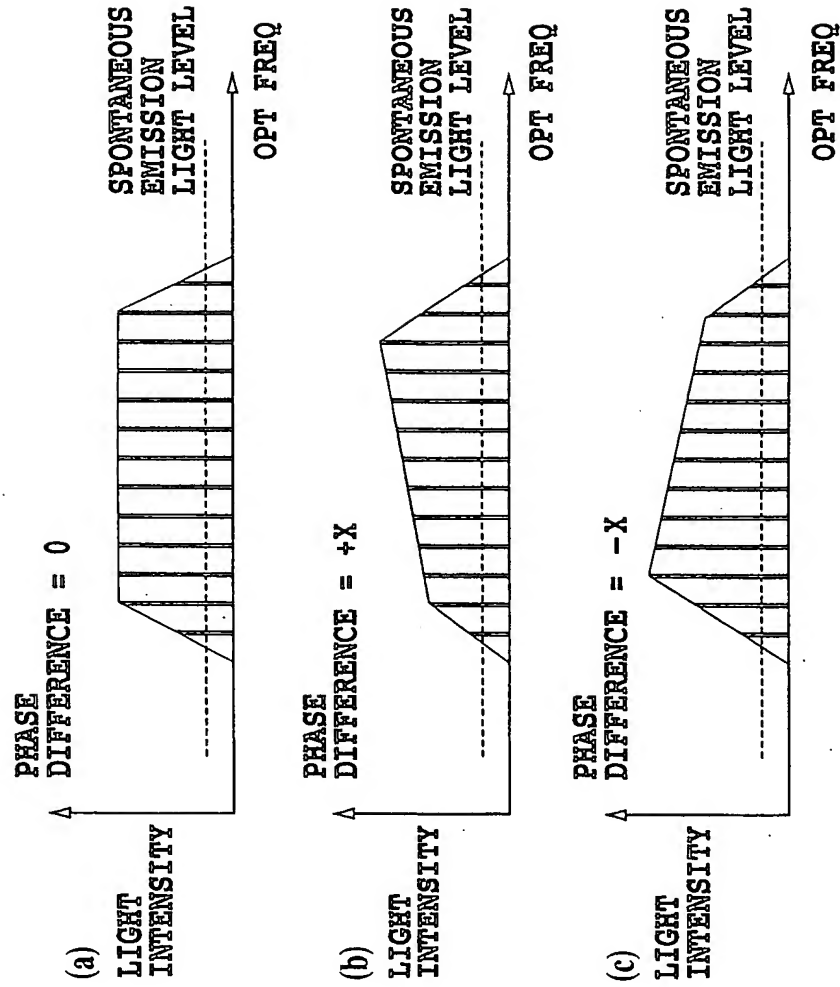


FIG. 58

SHAPE CONTROL OF OPTICAL SPECTRUM  
BY REGULATING PERIOD SIGNALS

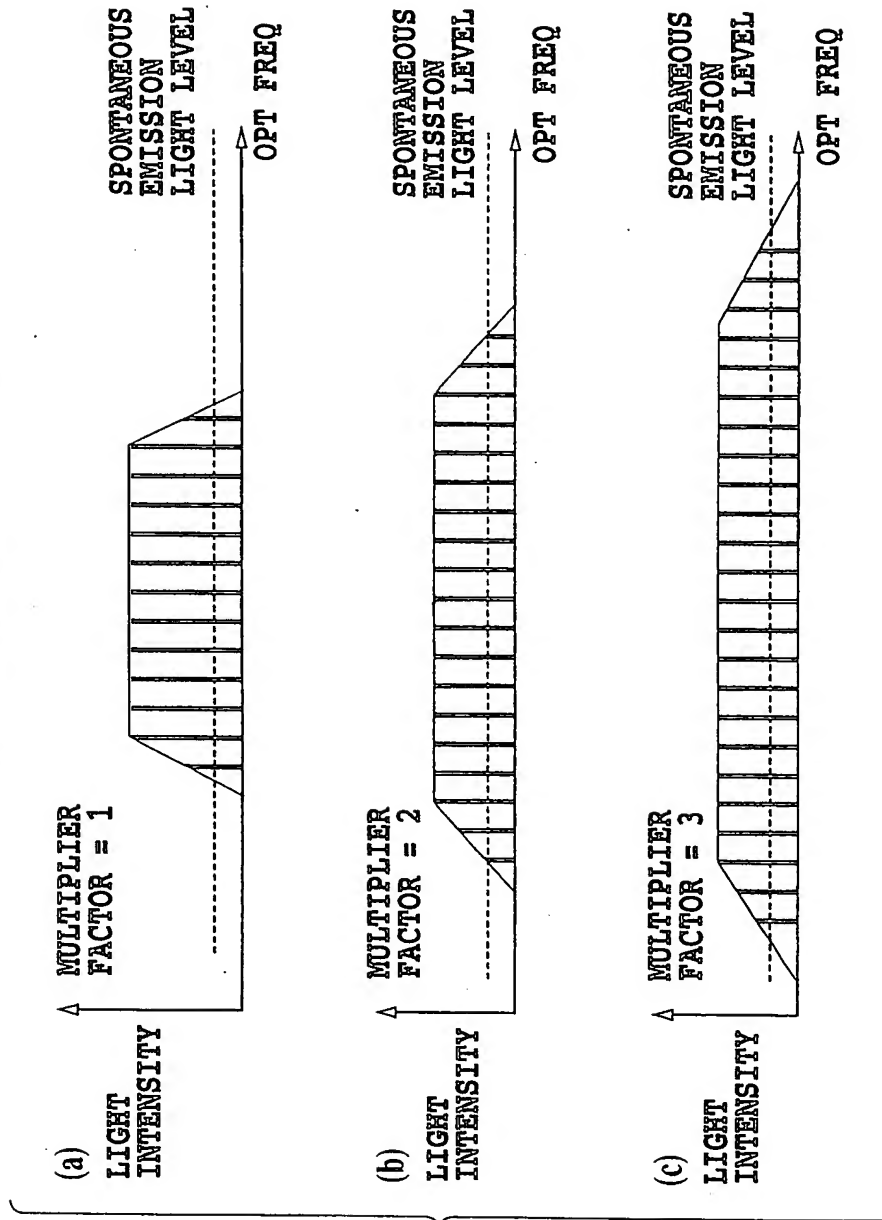


FIG. 59

EXAMPLE OF THIRD CONFIGURATION OF  
MULTI-WAVELENGTH LIGHT SOURCE

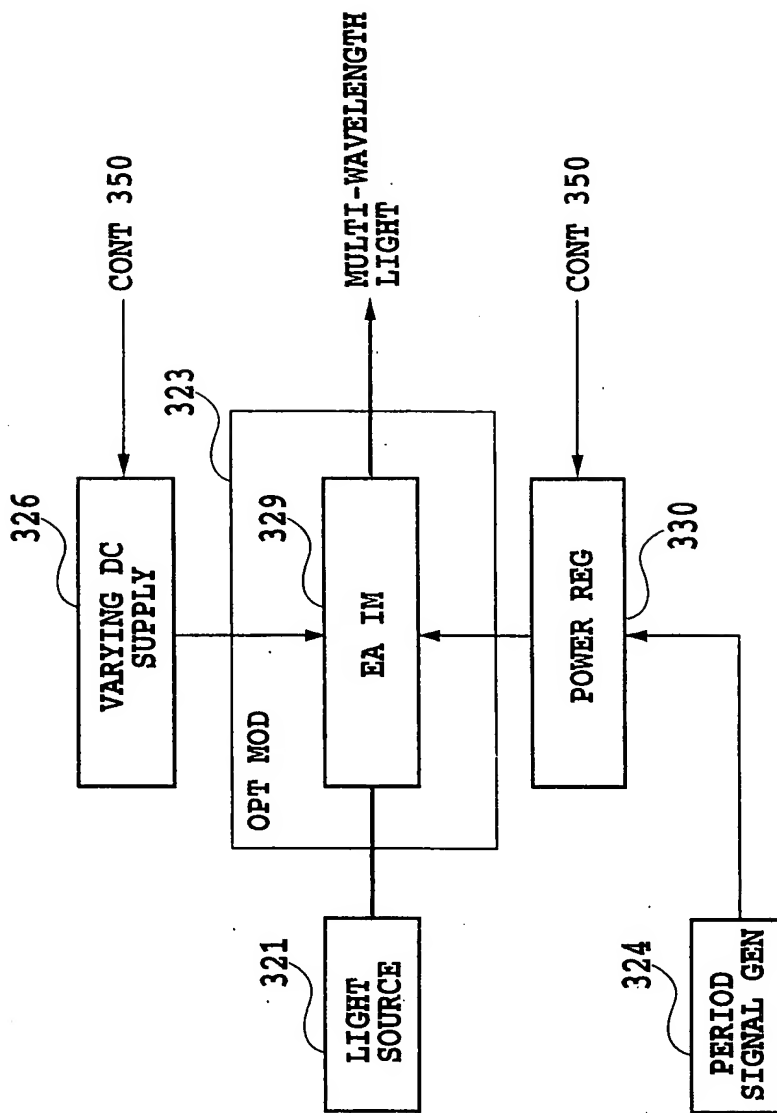


FIG.60

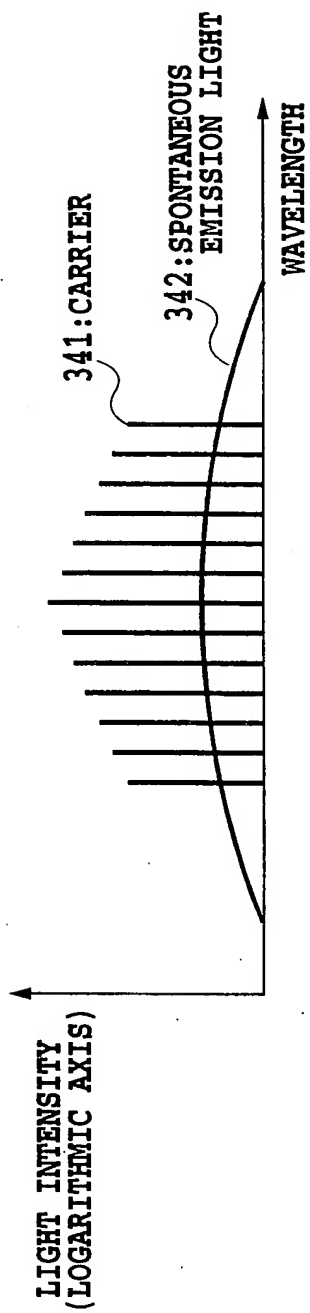


FIG.61

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FOURTH EXAMPLE OF CONFIGURATION OF  
MULTI-WAVELENGTH LIGHT SOURCE

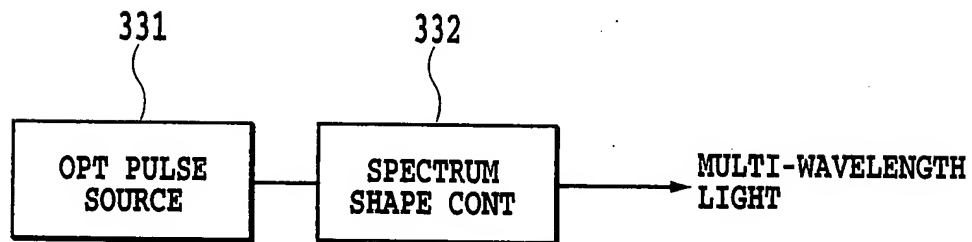


FIG.62



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PRINCIPLE OF ADIABATIC COMPRESSION  
WITH DISPERSION REDUCING FIBER

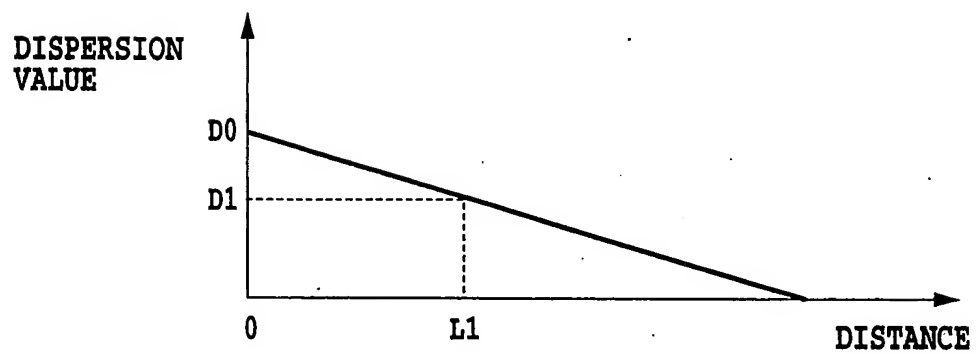
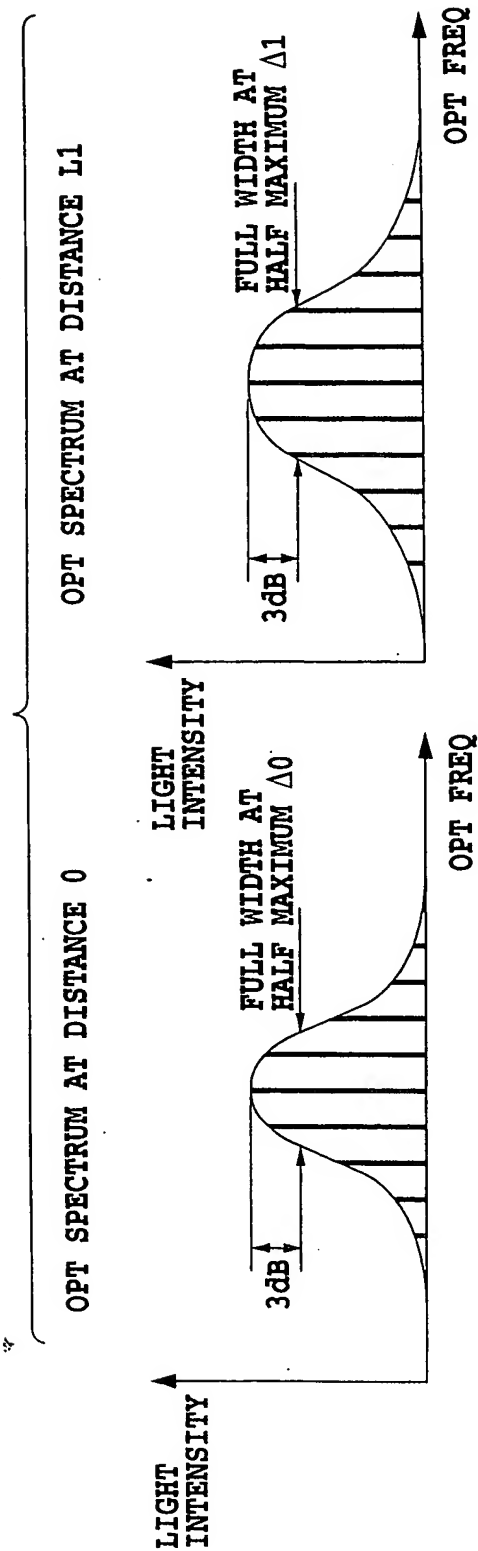


FIG.63A

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$$\Delta 1 / \Delta 0 = D 0 / D 1$$

FIG.63B

RELATIONSHIP BETWEEN OPTICAL SPECTRUM OF COHERENT  
COMPONENTS OF MULTI-WAVELENGTH LIGHT AND  
TRANSMISSION CHARACTERISTIC OF DEMULTIPLEXER

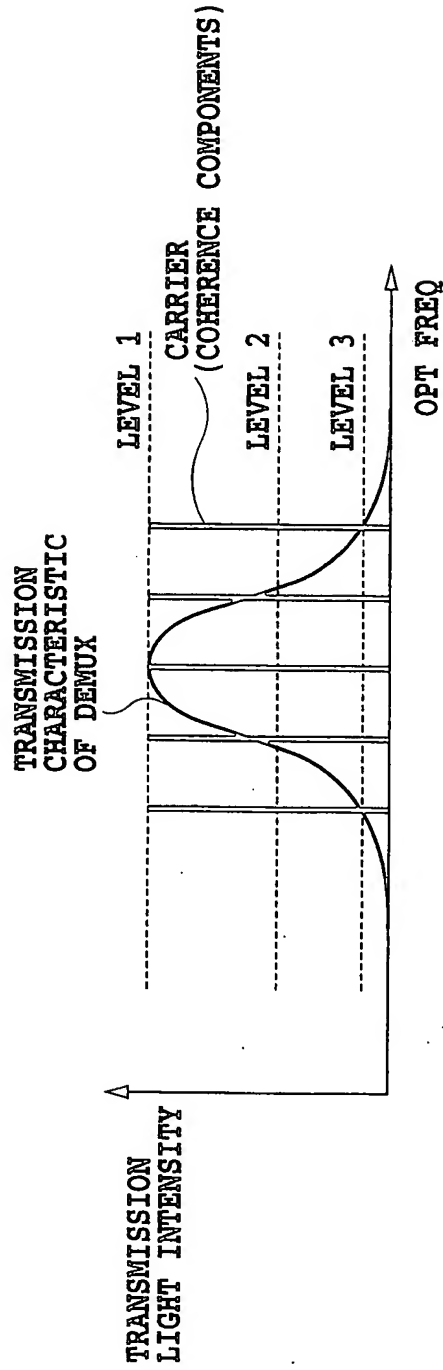


FIG.64

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RELATIONSHIP BETWEEN STIMULATED EMISSION LIGHT AND  
SPONTANEOUS EMISSION LIGHT FROM SEMICONDUCTOR LASER

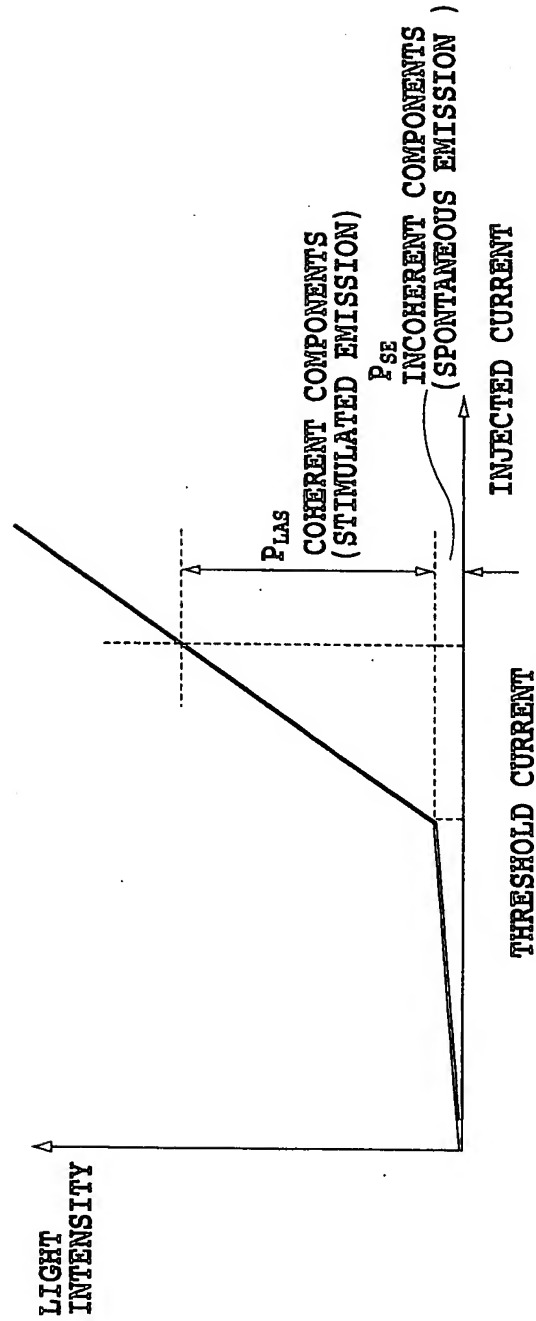


FIG.65

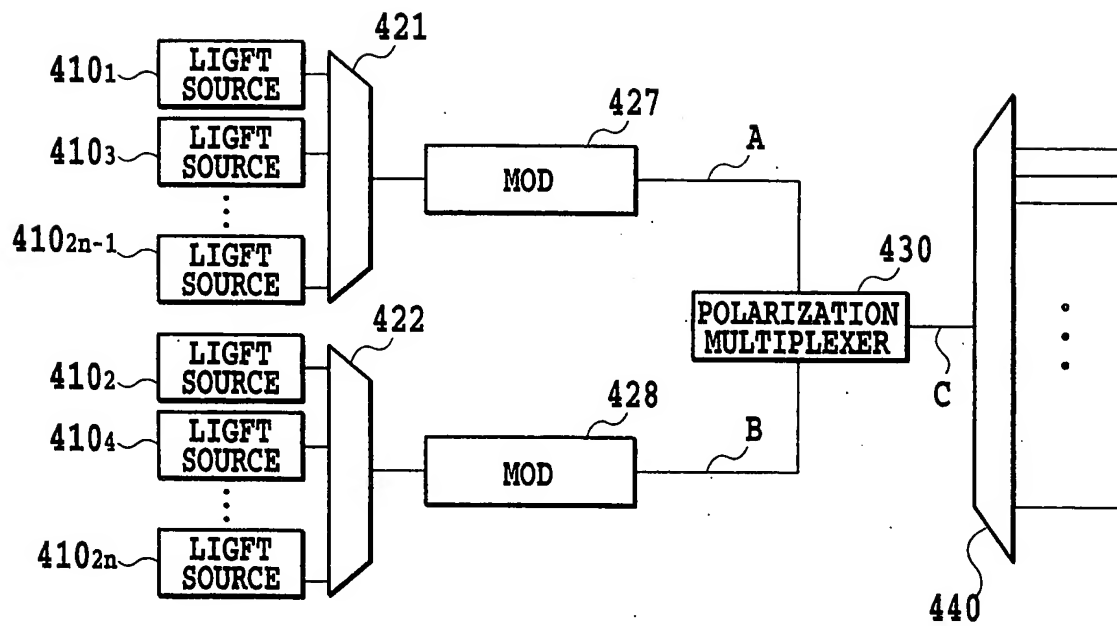
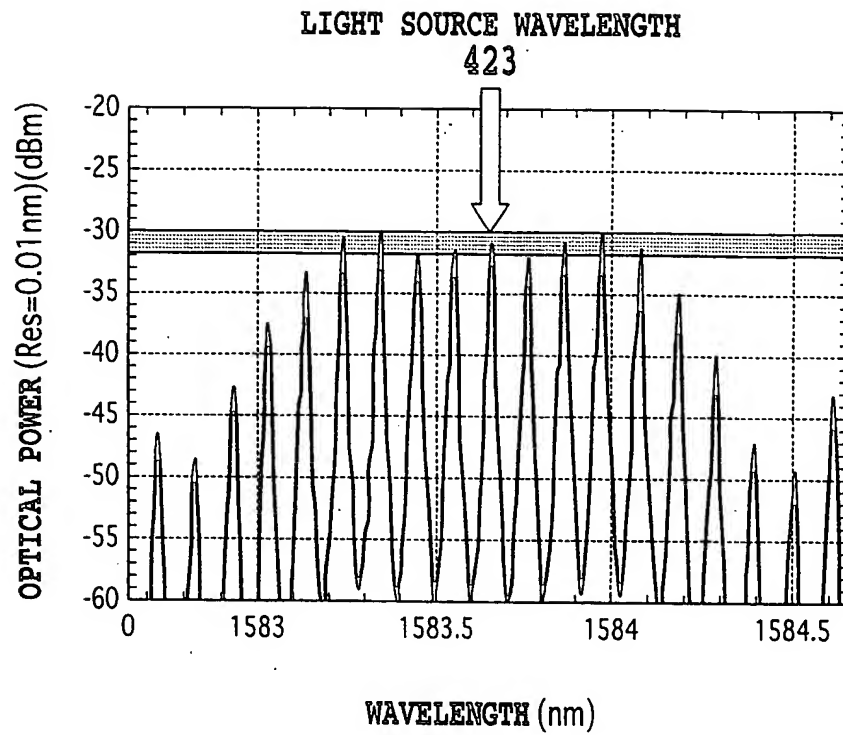


FIG.66

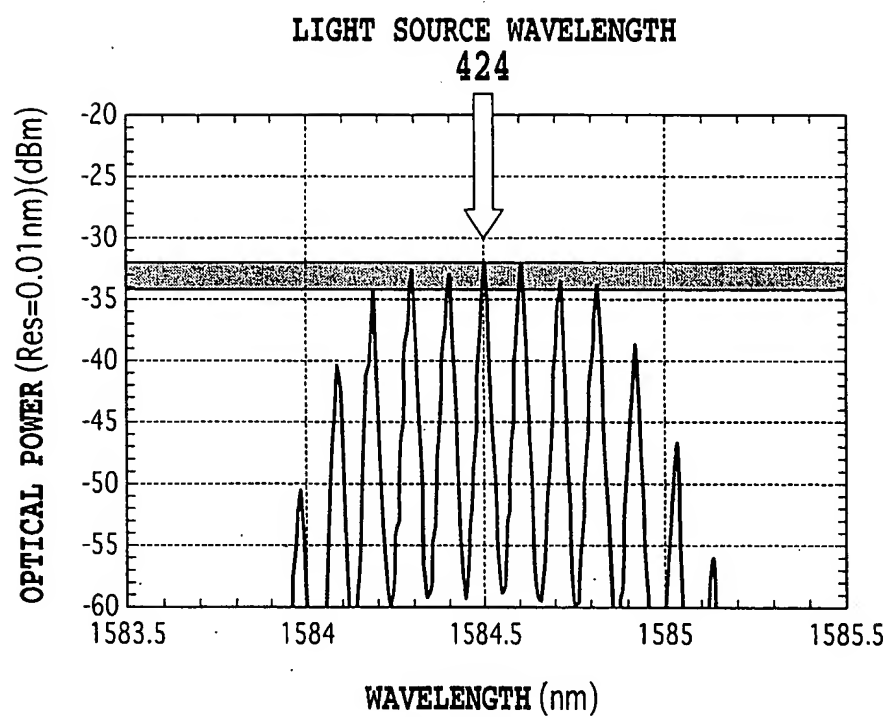
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ODD-NUMBER-TH LIGHT SOURCE WAVELENGTH AND SIDE MODES

FIG.67A

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EVEN-NUMBER-TH LIGHT SOURCE WAVELENGTH AND SIDE MODES

FIG.67B

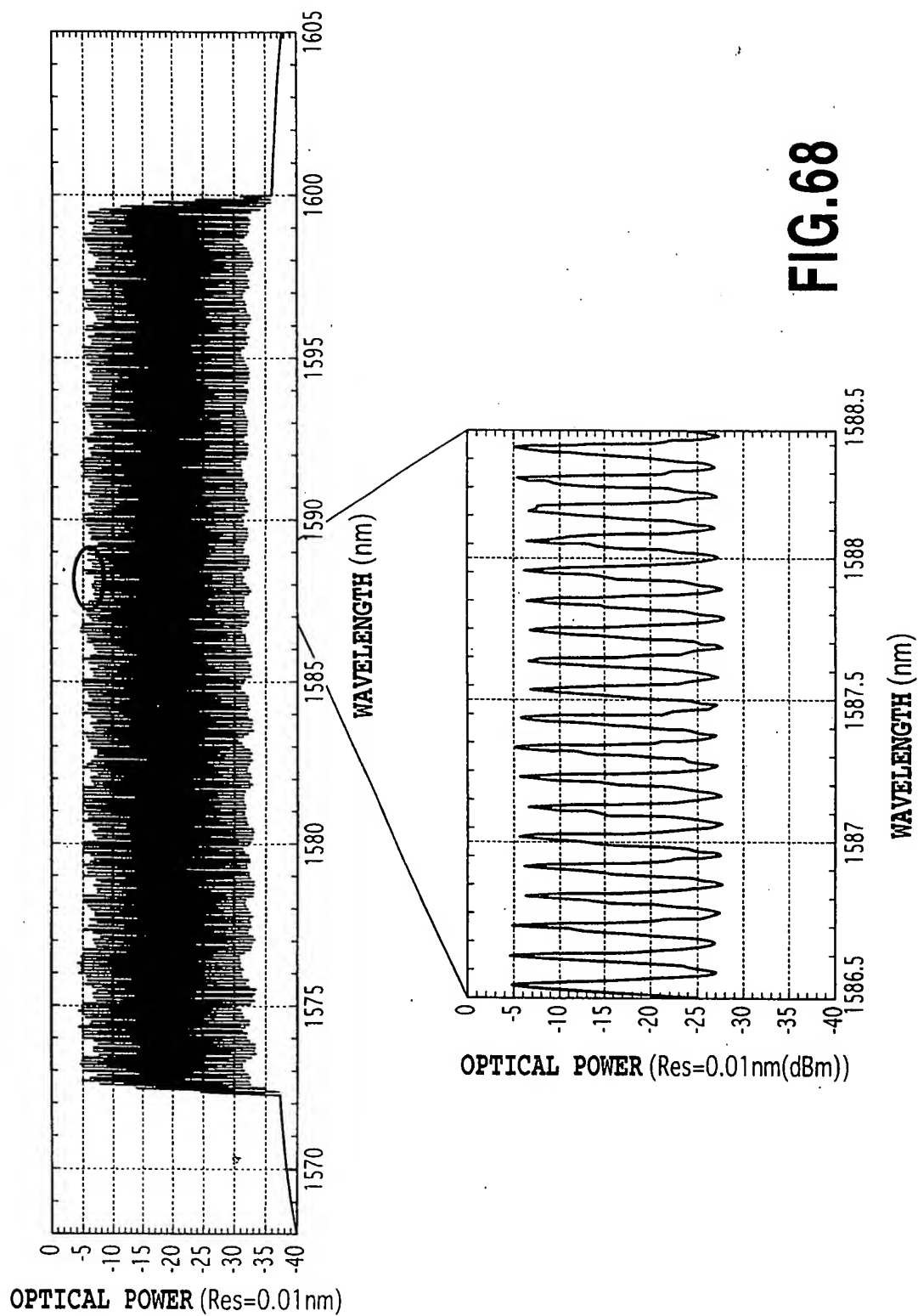


FIG.68



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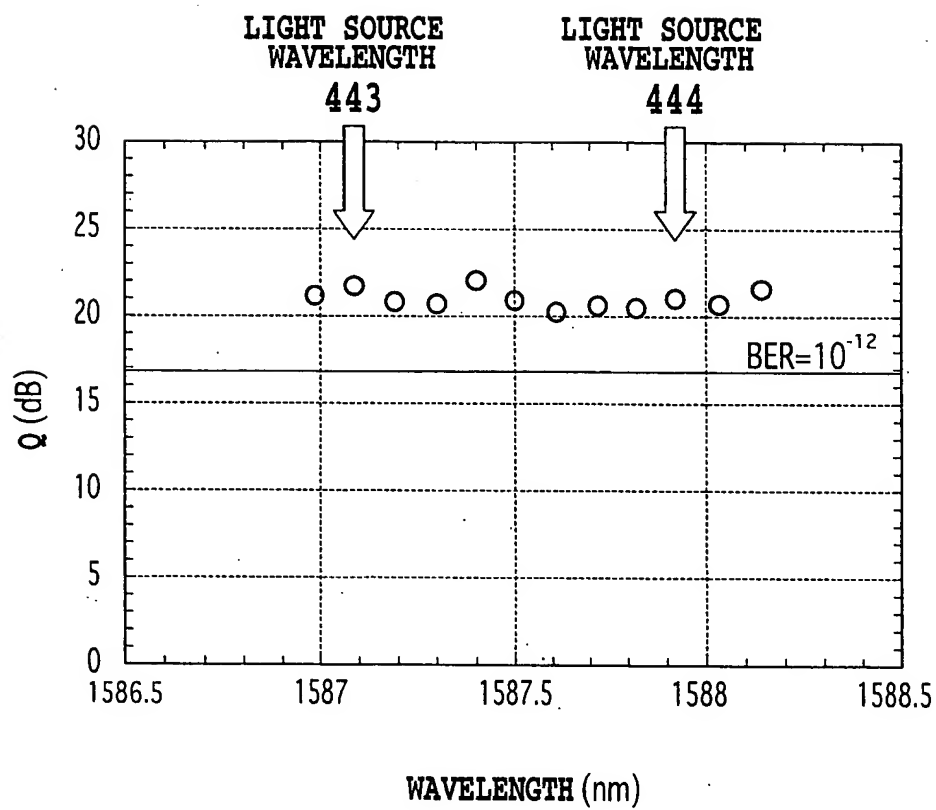


FIG.69

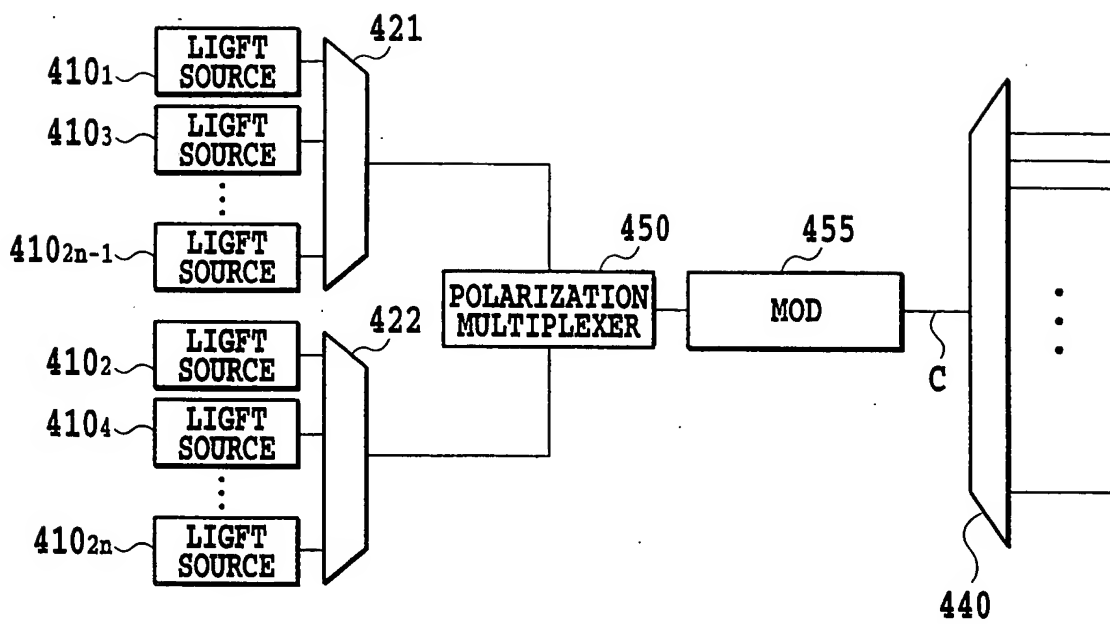


FIG.70

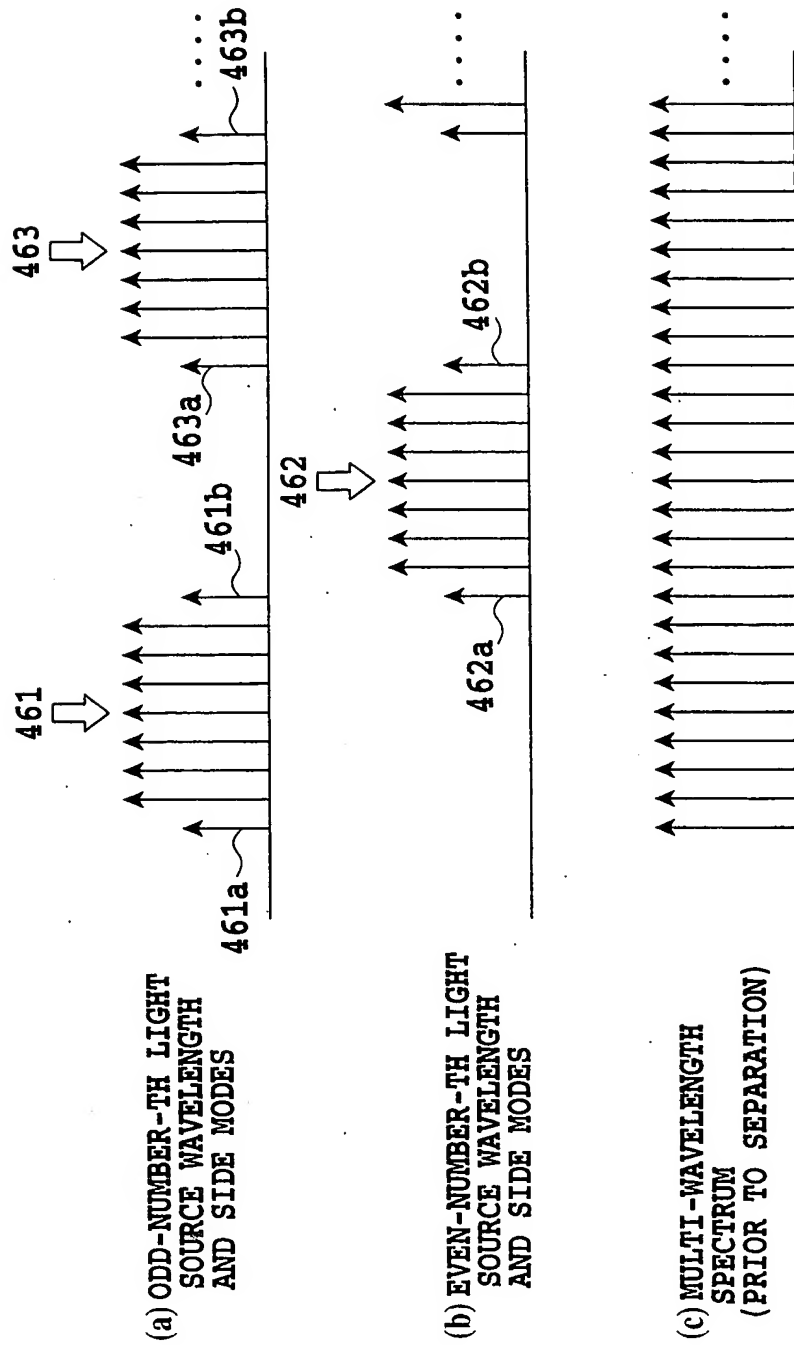


FIG.71